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Two Sections—Section One

Railway Age
AND RAILWAY REVIEW

FIRST HALF OF 1928—No. 21 | MAY 26, 1928 | SEVENTY-THIRD YEAR

Night Time Switching
in Busy Classification Yards Requires

CARDWELL

Double "A" Special
Draft Gears
to Prevent Damage to Cars

Union Draft Gear Co.
332 S. Michigan Ave., Chicago
Royal Bank Bldg., Montreal

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EXCELLENCE

EXCELLENCE IN TIMBER—*International* poles are inspected rigidly by trained timber men. Each pole is turned and inspected singly. If there are any signs of decay the pole is rejected. Only sound poles are selected for manufacture.

EXCELLENCE IN TREATMENT—*International* poles are carefully air or steam seasoned. For treatment every modern device is provided for the control and accurate measurement of temperature, steam pressure, vacuum and preservative.

EXCELLENCE IN SERVICE—*International* maintains a large stock of poles manufactured under the strictest supervision and in this manner provides for engineers high quality poles whose performance has proved them reliable in service, causing fewer interruptions, greater economy, and a more satisfied public.

Illustration shows section of Beaumont Plant showing how carefully poles are stacked on creosoted skids.

International Creosoting & Construction Co.
General Offices—Galveston, Texas
Plants: Texarkana Beaumont Galveston

International
Creosoted Yellow Pine Poles

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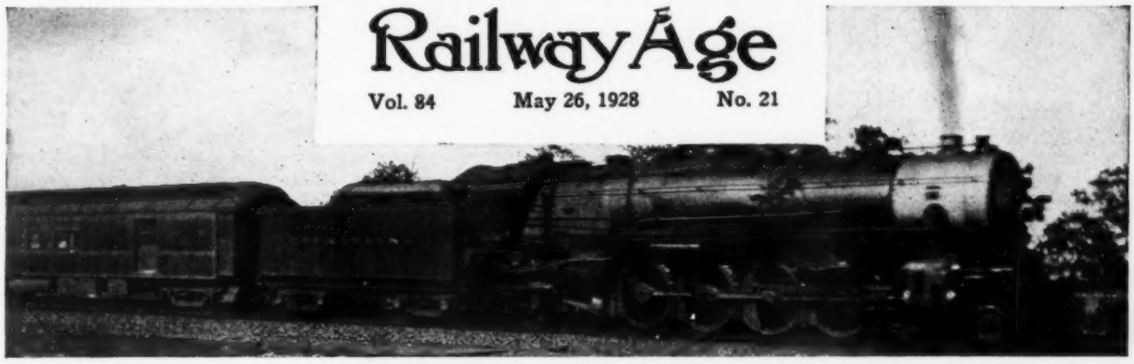
Railway Age

Vol. 84 May 26, 1928 No. 21



On the Lackawanna

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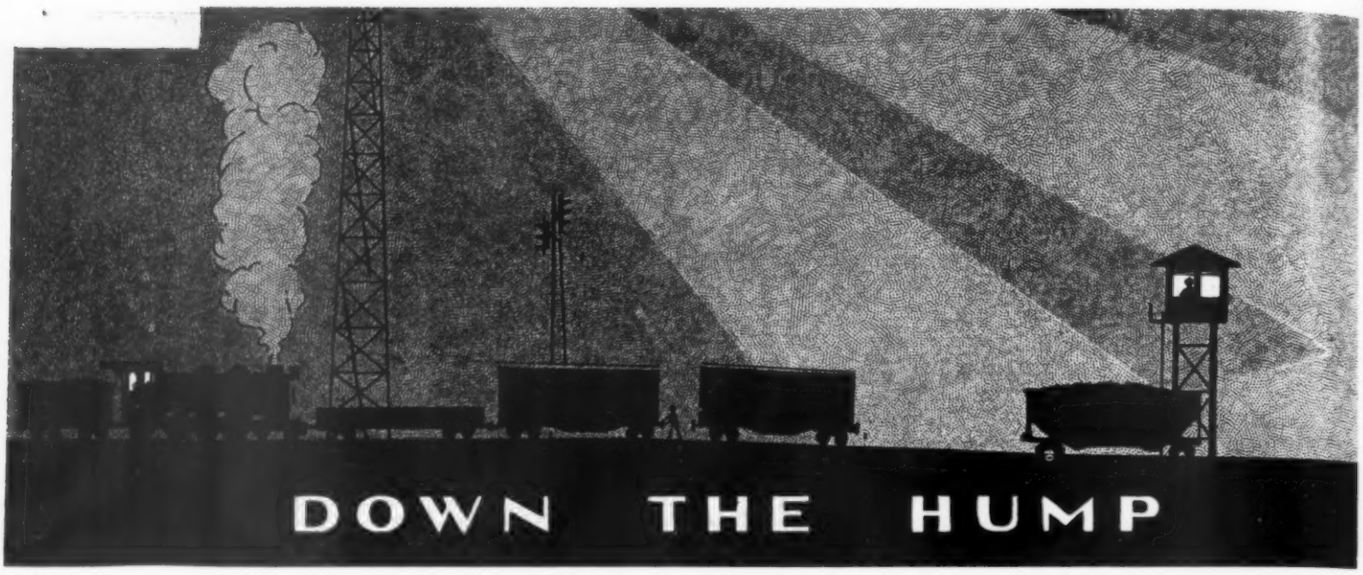

HAVE you ever watched night classification of cars in a car retarder equipped yard?

Have you ever watched the huge, riderless bulks slip down the hump, carefully slowed by the retarders and switched to their proper classification tracks?

Have you ever considered what this modern yard operation would mean in savings to your road in addition to the value of the good will formed for faster freight delivery?

Northbound GIBSON Yard
The first car retarder equipped yard
(Electro-Pneumatic)

Northbound MARKHAM Yard
The largest car retarder installation in the world.
(Electro-Pneumatic)

Southbound GIBSON Yard
Another "Union" Electro-Pneumatic Car Retarder Installation.

"Union" Electro-Pneumatic Car Retarders

Railway Age

Vol. 84, No. 21 May 26, 1928

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Marking the Station

FROM time to time the *Railway Age* has directed attention to the advantages attached to having station markers or signs so placed and painted as to be easily seen and read by railroad travellers. Many railroads do place station signs with some idea of making them easily recognizable by those riding in passing trains, yet there are still stations which a passenger cannot identify, crouch, peer and crane his neck as he may. Incidentally would not the marking of roofs of station buildings so that the name of the station and of the railroad line are easily identifiable from the air be an inexpensive method of creating good will toward the railroads on the part of a growing "air-minded" public?

Scientific Car Handling

IN the interests of operating efficiency, it is essential that cars be handled promptly, whether loaded or empty. Many roads have found it expedient to work out a general plan of car handling for the entire system and adhere to it. This, of course, requires close supervision and numerous reports, but it is relatively inexpensive and it does produce results. On the Missouri Pacific, for example, as described elsewhere in this issue, the installation of such a plan has produced remarkable results. Instead of a per diem debit of $172,649, as shown in 1926, a credit of $228,460 was shown in 1927, together with an increase of 12.19 miles in the average miles per car per day. Other benefits also accrued, as shown in the article. The old days of helter-skelter car handling are gone and no railway should leave its car movement to the whims of the local supervisory officers. These men, however efficient, are necessarily confined to local viewpoints, and scientific car handling requires a broad view of the situation as it applies to the entire system.

Number of Trains to Justify Automatic Signals

AUTOMATIC signals have been installed in many cases primarily for the promotion of safety in train operation, but their additional advantage in expediting train movements and increasing track capacity is now extensively recognized. On some roads the requirements for the safe and expeditious movement of a few fast passenger and freight trains may be such as to demand the protection and advantages afforded by signals. On other lines the problem may be that of increasing the track capacity and reducing the running time, and this raises a question as to the daily train movement that will justify the cost of installing automatic signals. One road maintains a train density chart for each line. When the number of trains on a single-track line approaches 23 per day an investigation is made of local conditions to determine whether signals would be justified. On an average 100-mile division with from 20 to 25 trains a day, experience has shown that the running time of through freight trains will ordinarily be reduced about an hour by the change from strict manual to automatic block operation. In view of the fact that this road installed automatic block signals on over 1,000 miles of single-track last year, it appears that the results obtained under this system have been satisfactory. Nevertheless, no such general rule can be applied in all cases. Much of the daily train movement in a given engine district may be concentrated in a period of but a few hours. Divisions approaching terminals or sections in the middle of important night runs where many trains meet, are subject to heavy train densities for short periods. Such circumstances must be given consideration as well as the total number of trains in the 24-hour period.

Concerning the Cost of Stopping Trains

DURING the past few months several letters have been received requesting information as to the cost of stopping modern freight and passenger trains. This question of costs incidental to stopping a train comes up frequently, especially in court actions and commission hearings. The subject was discussed in considerable detail by F. W. Green, then general manager, Louisville & Arkansas, in a paper before the American Railway Engineering Association in 1915, published in its Bulletin 175. Lack of space prevents reviewing Mr. Green's method of calculating the cost of stopping trains, but an abstract of his paper was published in the May 15, 1915, issue of the *Railway Review*, page 655. Another article on this subject was also published in the March 22, 1918, issue of the *Railway Age*, page 708, which deals exclusively with the cost of recovering the energy lost in stopping. Mr. Green figured that the cost of stopping a passenger train of 530 tons, running at a speed of 50 miles an hour, was 42 cents and the cost of stopping a freight train of 2,000 tons, running at a speed of 35 miles an hour, was $1. Mr. Green includes in his calculations the cost of the coal and water used, wages paid the crew, wear and tear on brake shoes, tires, brakes and draft rigging, lubricants, supplies and other similar items. The costs of all of these items have increased considerably since 1915. Using the same methods and formulas proposed in the two articles referred to, the present cost of stopping a passenger train of 560 tons, running at a speed of 50 miles an hour, varies from 84 cents to $2.80 and the cost of

stopping a freight train of 4,000 tons, running at a speed of 30 miles an hour, varies between $1.44 and $4.80.

The Increasing Importance of Air Right Development

THE recent announcement of the completion of plans for a huge air right development over the tracks of the Chicago & North Western at Chicago affords an outstanding illustration of the opportunities for the railroads to realize on the value of their right-of-way holdings in large cities. This project is noteworthy not only for its size, embracing the construction of a building to contain four million square feet of floor area, but is distinctive by reason of the manner in which the railroad disposed of the so-called air rights. The plan was consummated through the sale in fee simple of certain subterranean and super-aerial spaces, in other words, a specific number of cubic feet of space below and above the tracks. However, by reason of the character of the improvement to be created as a consequence of the transaction, a great warehouse for mercantile establishments, the North Western will be assured an appreciable increase in transportation revenue in addition to the proceeds from the sale. Like the project for the Chicago Daily News building over a portion of the Chicago Union Station property, on which construction is now under way, the North Western development is not contingent upon the inauguration of electric operation, thereby affording the railways of the country two precedents which they should be able to cite with good effect in negotiations to the same end in other localities.

Passenger Traffic in Canada

THE Canadian lines are proving more fortunate than most roads south of the international border insofar as their passenger business is concerned. In 1927 the Canadian Pacific had an increase of 1¼ per cent in revenue passengers carried. The Canadian National, with a slight decrease in the number of passengers carried, had an increase of some 3½ per cent in passengers carried one mile. The average journey per passenger on both roads increased slightly, showing that both roads held their own and even improved their business somewhat mainly by securing more long-distance riders. Highway conditions in Canada, both from a standpoint of improved roads and their availability for easy year-round transportation, are not the same as in the United States. Highway competition, therefore, has not become so serious. Such competition exists, of course, and is augmented by millions of American automobilists who cross the border in the summer months. Still, so great has been the increase in vacation and tourist travel that the railroads have been able to hold their own. The methods used by the Canadian roads to bolster up their passenger business have not been greatly different from those used south of the border. This would tend to show that these methods are fundamentally sound, since they have been relatively successful in accomplishing their object. That they have not worked quite so well everywhere in the United States, speaking generally, reflects not on the methods, but points to the varying conditions of highway competition in the two countries.

Retirement Provisions of Pension Plans

A CORRESPONDENT, Linton W. Stubbs, in the *Railway Age* of April 28, 1928, page 981, asked this very pointed question: "Would it not be better to base the retirement on efficiency, rather than age?" While, in his opinion, this would require that some employees be relieved at much less than 70 years of age, others might well remain in service after that time.

In discussing the reasons for paying pensions in an editorial in the *Railway Age* of April 21, 1928, page 902, it was shown that "a pension system is apparently justified only to the extent that it improves the efficiency of the organization and is a sound business proposition." This would seem to lend support to Mr. Stubbs' contention.

J. C. Clark, who has given much time to the study of railroad pensions, has made the statement that "employees who are not capable of performing their work in a safe and efficient manner, must be retired from the service, and the sooner this is accomplished, the better for all concerned." Mr. Clark offers the following as the four main reasons for employees becoming unable to give satisfactory service: (1) Impairment of physical and (or) mental faculties due to old age; (2) impairment of physical and (or) mental faculties due to accident or disease; (3) inability of those with naturally low intelligence to keep pace with the requirements of the service; (4) failure of the company to provide adequate training.

It seems apparent that if the primary purpose of paying pensions, as above expressed, is clearly kept in mind and retirements are made in accordance with Mr. Clark's suggestions, two things will naturally follow: (1) There will be an increase in pension costs because of the earlier retirement of some of the workers; the railroads, however, will actually save money because of the increased efficiency due to the elimination of the unfit. The focusing of attention upon this question and the resulting action may, of course, seriously upset the actuarial calculations, based on former practices, if changes are made. (2) No one wishes to see early retirements if they can possibly be prevented. This naturally suggests that the managements should inaugurate more adequate plans for the selection, and the early as well as the continued training of all employees, and that this be supplemented by sound health and recreation programs. These measures will eliminate some of the causes for early retirements and the saving in pension costs will be in addition to those due to the increased efficiency of operation brought about by the installation of such personnel programs.

The question of the age of, and the causes for, retirement are of extreme importance, because, as indicated by the English railway pension studies, the lowering of the average age of retirement by even a year or two introduces serious financial considerations. *It is important, therefore, that all of the factors bearing on the retirement provisions in the pension plans be most thoroughly and critically analyzed.* The necessity of this is emphasized by the fact that pension costs are steadily mounting and yet will not reach a peak on most roads for many years. This was pointed out in an editorial on pension allowances in the *Railway Age* of May 19, page 1139; it is further emphasized in a communication from Ingalls Kimball on another page of this issue.

Do not these considerations also emphasize the need for broader and more intensive personnel programs, with a view to providing more carefully selected, better trained, and healthier and happier employees, who can get the most out of life as indivduals and at the same time render a larger and more efficient service to their employers?

Power Plant Supervision

ATTENTION has been directed in recent issues of the *Railway Age* to instances in which railroads have been able to make considerable reductions in the cost of power used in shops and yards. In some cases these savings have been effected by the building of a new power plant, and in others by purchasing electric power and using the old power plant for heating purposes only, the choice between these alternatives depending upon local conditions. The reasons for these savings being large are twofold; first, the power industry has made many important improvements during the past ten years which have resulted in reducing the cost of generating power, and, second, the generation of electric power has too frequently been regarded as an unimportant factor in the operation of a railroad—the power plant often goes with little attention as long as it continues to supply sufficient power.

Before a decision is reached to buy power or build a power plant, it is, of course, necessary to determine how the operation of existing plants can be improved. Examples of such possibilities are shown by work done recently on the Boston & Maine. It was started by compiling cost figures from the weekly and monthly power plant reports and making these figures available to all plants. The figures include pounds of coal, pounds of coal per kilowatt-hour and cents per kilowatt-hour for each plant. They permit each employee to compare his plant with others and, more important, to see how the efficiency of his own plant varies. In one plant graphic charts are placed in the boiler room which keep the daily performance before the firemen. One chart covers individual watches while the second covers combined watches. The superintendent of this plant recommended the installation for the following reason: "Possibly the firemen do not fully understand just what efficiency is and how to get it, or perhaps they feel no particular interest in the matter as they figure that pay day shows up once a week regardless."

While the operating costs of one plant cannot be compared with those of another and changes of plant load and other factors may cause plant efficiency to vary from season to season, or even during shifts, the practice of posting records has done much to stimulate interest in obtaining improved operation and in making desirable changes in the equipment. Such changes vary with the need of the plant and typical examples of those that have been made are as follows: Installation of a means to weigh ashes as well as coal; adding a closed feedwater heater and jacketing the heater line; replacing feed pumps that have remained in service beyond their allotted time; using condenser cooling water, which was formerly wasted, for feed water; replacing flat grates with hand stokers; installing front-end soot blowers; applying plastic material to boiler settings to reduce air leakage; rigging a fire pump to provide protection against a deficiency of circulating water; making needed overhaul of engine with respect to cylinder and valves; periodically taking indicator cards to check valve setting; changing shape of ash pit so that the crane can do most of the ash handling formerly done manually, and where practicable installing steam ash ejectors.

A record kept during four years shows that the benefits of such supervision were greater during the first three years than during the fourth, improvements gradually approaching a limit. The practice of posting performance records is not an expensive one and in the case of the Boston & Maine it effected almost immediate results.

First Joint Rail-Air Service Announced

FORECASTS of the early establishment of joint passenger service by railways and air transportation companies were brought much nearer to realization last week when the first proposed operation of this sort was announced. As reported in the *Railway Age* last week, the Transcontinental Air Transport, Inc., has been organized by interests identified with the Pennsylvania, the National Air Transport, Inc., the Wright Aeronautical Corporation, the Curtiss Aeroplane & Engine Company, the Ford Motor Company and others. Although not financially interested the Atchison, Topeka & Santa Fe will cooperate in the traffic arrangements. Under the proposed schedule passengers, by riding trains at night and changing to airplanes during the day, will complete the journey between New York and Los Angeles in approximately 48 hours, reducing the time required to make the same trip entirely by railway train more than 36 hours.

This is a logical development and one which was not at all unexpected. The public response to the establishment of air passenger service has been remarkable. Almost from the start the demand on the part of travelers for passage on the air lines has been regularly much greater than the limited facilities for passenger transportation offered by nearly all such lines. Large though the United States is, the centers of population between which there is considerable travel and which are separated by much more than one night of train travel are relatively few. On account of this fact, and also on account of the fact that rates for passenger transportation by air are of necessity under present conditions rather high, it has been felt that the passenger business of the air lines would be slow in developing. On the contrary, it is already overtaxing their facilities.

It is probably true, however, that the number of passengers who can and will travel by airplane at this time, if opportunity is offered them, is still comparatively small. It is limited to a large extent by the present high cost of air transportation. More important is the feeling among the public in general that, in spite of evidence to the contrary, air travel is still unsafe. Whether it *is* safe or unsafe makes little difference; the important point to the transportation man is that a large proportion of the public *thinks* it is unsafe. The same thing was thought of the railway train a hundred years ago.

To overcome this apprehension of air travel in the public's mind, no more constructive step could be taken than to establish joint rail and air service sponsored by leading railway companies. The public has faith in the stability and safety of the railways. The fact that rail-

ways have given their backing to air transportation and thus tacitly testified to their faith in its safety, should go a long way in changing the public's state of mind. Through travel by train at night and by airplane during the day will not be so fast as all-airplane travel, but it will be much more comfortable, and in the present state of the development of facilities for night flying, will be considerably more safe. It is a step in advance of all-rail travel, but not too long a step.

The joint rail-air service should attract considerable patronage from the start. As it proves its dependability it will attract still more passengers. When more passengers are carried rates can be reduced, and when rates are reduced still more passengers will be attracted and so on. Thus, the way is being paved for air travel in this country on a large scale.

Almost Perfect Service

A RECORD in the distribution of freight cars to shippers surpassing any other ever made in the history of railroad transportation was made by the railways in the seven weeks ended on April 30. During this period an average of 957,495 cars weekly were loaded with freight, and meantime there was not a failure to furnish to any shipper anywhere in the United States a single car at the time and place he had asked that it be furnished. In other words, for seven consecutive weeks the railways made a 100 per cent record in distributing and furnishing cars. During the first seventeen weeks of the year the average number of unfilled shippers' requisitions was only 14 cars weekly, and the number promptly furnished was over 99.99 per cent of the total number ordered.

These figures, when compared with those for earlier years, afforded a remarkable demonstration of the improvement in railway freight service that has occurred during the last seven years. Formerly, and prior to 1924 especially, the railways always reported weekly both surpluses and "shortages" of cars, although sometimes the surpluses were larger than the shortages, and sometimes the shortages were larger than the surpluses. The existence of "shortages" when there were still larger surpluses, was of course, due to imperfect distribution. The average weekly shortage in 1920 was 81,592. Even in 1921 when, owing to the slump in freight business, huge car surpluses were reported, there was an average weekly shortage of 1,454. In 1922, owing to the shop employees' strike, the shortage reached a maximum of over 179,000, and averaged almost 48,000 weekly.

While there was still a large shortage of cars, the presidents of the railways met in New York in the spring of 1923 and adopted their famous program for furnishing adequate transportation. This included improvement in the distribution of cars by strengthening and increasing the authority of the Car Service Division of the American Railway Association and by seeking the cooperation of the shippers through promotion of the organization of Regional Shippers' Advisory Boards.

The average shortage reported in 1923 was 29,216 weekly and in 1924 only 1,047 weekly. In 1925, a year of record breaking business, it averaged only 437, and in 1926, another year of record breaking business, only 287. In 1925 there were two weeks when, for the first time, no shortages of cars were reported. In 1926 there were three such weeks, and in 1927 there were eleven. The longest period last year during which there was no shortage reported was four consecutive weeks. In one-half of the weeks in the first four months of this year there were no unfilled shippers' requisitions. As already indicated, this was the situation throughout the last seven consecutive weeks for which the figures are available, and in the weeks in which there were unfilled requisitions they varied from a minimum of four to a maximum of only 88.

Considering the fact that there are about 2,500,000 freight cars on the lines of the railways in the United States; that practically every car moves throughout the country over the numerous different railways, and that they are furnished to and used by literally millions of shippers, it may be said without exaggeration that the system for distributing cars which has been developed within recent years is as perfect for solving a complicated problem, and keeping it solved, as any system that ever has been developed for any purpose by American industry.

An Indictment of Regulation

A LETTER written recently by Congressman Homer Hoch of Kansas, the principal author of the Hoch-Smith resolution, to the Interstate Commerce Commission, forcibly illustrates the fact that after more than 20 years of effective federal regulation of railways it is admitted on all hands that regulation has thus far failed to solve the principal problem for the solution of which it was adopted. That problem is the determination of what are reasonable railway rates, and the fixing of rates which the consensus of informed opinion will accept as reasonable. Formerly railway managers were bitterly criticized for the way they made rates, and regulation was adopted principally to correct the shortcomings of rates fixed by them, but railway managers, shippers and politicians all agree on at least one point —viz., that rates are not satisfactorily made now.

Mr. Hoch says the contention that the commission is directed by law to allow the railroads to earn a "fair return," which it has held would be 5¾ per cent, "ignores entirely" the earlier requirement of the law that rates must be "just and reasonable." What he evidently means is that "just and reasonable" rates on farm products would be lower than those now in effect, and that lower rates should be made regardless of how long this would postpone the time before any railway or number of railways could earn a "fair return." In other words, the net return the railways can and do earn is, in his opinion, a measure of the reasonableness of rates that should be given little or no weight if, according to other standards, rates proposed or in effect are not reasonable.

It should not be overlooked that a precisely analogous contention is advanced by labor leaders. Railway employees, they claim, are entitled to reasonable wages, and the earnings the railways do or can make are not even one measure of the reasonableness of the wages they should pay. Most of the taxing authorities, without expressly avowing it, act in accordance with a similar economic philosophy, and tax the railways regardless of earnings.

When we consider together the views of those who

want higher taxes, higher wages and lower rates, the conclusion suggested becomes apparent. It is, that the rights of the railways are not on the same plane as, but are entirely subordinate to, the rights of the public, their patrons and their employees, and if, measured by standards other than earnings, the public is entitled to higher taxes, shippers to lower rates and employees to higher wages, then the law requires them all to be granted even if thereby net earnings will be wiped out. In effect, this view is urged even as one of economic expediency. Rather than that a single employee should fail to get a wage that will enable him to enjoy a high standard of living, that a single farmer should pay a rate that would interfere in the smallest degree with his prosperity, or that even a single taxing authority should go unsatisfied, the railways should be prevented from earning any return at all.

We are aware that nobody will admit that he is committed to any such view. Those who advocate reductions of rates, and even those who advocate advances of wages, regardless of the effect on net earnings usually are earnest in avowing acceptance of the principle that the railways should be allowed to earn a "fair return," and that the welfare of the country requires that they shall do so. But obviously to fix wages, taxes and rates regardless of net earnings would speedily wipe out net earnings. That policy actually was followed under government operation, and, of course, the taxpayers had a big deficit to pay.

Rights of the Railways

The trouble with those who contend for what they call "reasonable" rates and "reasonable" wages, regardless of whether they are compatible or incompatible with a fair return for the railways, is that their theories are wholly unsound, both legally and economically. The legal right of the railways to earn a fair return, if they are honestly, efficiently and economically operated, is just as clear and well-established as the right of their employees to reasonable wages or of shippers to reasonable rates, and is not subordinate to, but coördinate with, the rights of these other parties. A class or group of shippers may, at a given time, be entitled to a reduction of rates, but if the railways affected will be thereby prevented from earning a fair return they are entitled to advances in other rates. A class of employees may be entitled to an advance in wages, but if it would prevent the railways affected from earning a fair return the railways are entitled to changes either in their operating expenses or their total earnings that will compensate them for the advance made in wages.

If these things are not true, then the decisions of the courts for almost 40 years holding it is unconstitutional confiscation to deprive well-managed railways of a fair return are meaningless. What logic is there in claiming that the courts and the law mean what they say when they declare that shippers are entitled to reasonable rates, but do not mean what they say when they declare with equal solemnity that the railways are entitled to a fair return?

The claims that wages and rates should be made "reasonable" even if the effect is to prevent the railways from earning a fair return necessarily involve the assumption that there is or may be an incompatibility between reasonable wages, reasonable rates and a fair return. This assumption has no foundation in fact. A people who can afford to spend as much for comforts and luxuries as the people of the United States can and do spend cannot afford not to do what is required to provide a service that is essential to their economic welfare. Good and adequate railroad service is universally conceded to be such a service. If such service is to be provided the railways must pay reasonable wages, and, on the average, earn a fair return. Entire schedules of rates that are barely sufficient to enable the railways as a whole or any group of them, to pay reasonable wages, operating expenses and taxes, and, in addition, earn a fair return, cannot be excessive because they are required to enable the service to be rendered.

The railways during the last year have, on the average, earned at the rate of less than 4½ per cent annually. With such a return being earned, if some of their rates are excessive, as is implied by Mr. Hoch, it must be either that they have other rates that are too low or operating expenses and taxes that are too high. Wages have increased more in proportion since before the war than other operating expenses, and, therefore, if operating expenses are too high, the cause must be found principally in the prevailing wages; but Mr. Hoch, like other politicians, refrains from criticizing railway wages or taxes as too high.

The Outstanding Railroad Problem

The outstanding railroad problem of today is to so adjust rates, wages and net return that they will be reasonable as compared with each other. To say that rates, or wages, or both, must be made reasonable before the railways have any claim to a fair return is an absurdity, because, as, legally and economically, the rights of railway patrons, employees and investors are equal, the object should be to give all of them their rights in the same measure. Before effective government regulation was adopted the problem of keeping rates, wages and net returns fairly adjusted in relation to each other was the problem of the railway managements, which were constantly subjected to pressure from their patrons for lower rates and from their employees for higher wages. Since effective regulation was adopted it has been the problem of both the managements and the government regulating authorities. When the policy of regulation of rates was adopted the government assumed the authority, and therefore the responsibility, of assuring reasonable rates to shippers, and fair returns to the railway investors. For many years it has also directly or indirectly regulated the wages of the employees. There has never been any more foolish talk heard in the history of railway regulation or of economics than much current talk to the effect that the railways should not be allowed to earn a fair return because the traffic will not bear rates high enough to enable them to do so. They earned almost six per cent on their property investment in 1916, although the volume of traffic and the investment required to handle it were much smaller then than now.

If the present or higher rates are necessary to enable the railways to earn a fair return, and the present traffic cannot bear them, then the reason must be sought elsewhere than in the return being earned or sought by the railways. It must be found in the advances in operating expenses and taxes that have occurred. Mr. Hoch's apparent contention that our present system and policy of regulation are such that in order to give reasonable rates to the shipper it is necessary to deny a reasonable net return to the railways, is an indictment of our present system and policy of regulation as a total failure, and if the indictment is justified we should scrap them and begin all over again.

MISSOURI PACIFIC LINES
Report of Bad Order Empty Freight Cars on Hand
MISSOURI PACIFIC LINES
Report of Bad Order Loaded, Transfer and Adjustment Freight Cars on Hand
MISSOURI PACIFIC LINES
Report of Loaded Cars on Hand 24 Hours or More for Movement, Placement or Disposition
MISSOURI PACIFIC LINES
REPORT OF CARS ON HAND
Missouri Pacific Railroad Company
MISSOURI PACIFIC LINES
MISSOURI PACIFIC RAILROAD CO
MISSOURI PACIFIC LINES
REPORT OF CARS ON HAND CONTAINING COMPANY MATERIAL
MISSOURI PACIFIC LINES
MISSOURI PACIFIC RAILROAD COMPANY
MISSOURI PACIFIC LINES
INSPECTOR'S REPORT OF CAR BAD ORDERED

The Use of Reports Aids Efficient Car Handling on the Missouri Pacific

Scientific Car Handling Cuts Per Diem Expense

Missouri Pacific installs efficient methods to increase the speed of movement of loads and empties

THE per diem statement of the Missouri Pacific for 1927 shows a credit of $228,460, as compared with a debit of $136,620 for the previous year and debits of $172,649 and $576,140 for 1925 and 1924 respectively. Admittedly, per diem figures cannot be used as a yardstick in measuring the results obtained from speeding up the movement of loaded cars or of empty cars required for loading, since per diem is necessarily dependent upon a number of other factors. Even allowing, however, for the other factors, such as the class of commodities moving, the percentage of unserviceable cars, etc., these figures reflect an excellent showing in accelerating the movement of cars over the railroad.

Among the other factors reflecting the results of scientific car handling is an increase of 12.19 miles per car per day in the past five years. Further, as a result of speeding up the movement of loads and empties, there was a monthly average of 2,006 less all-traffic cars on the system in 1927, as compared with 1923. This showing was made despite an increase of 129,904 cars of revenue freight loaded locally, 108,212 cars of revenue freight received from connections, and 197,575,583 freight car miles made by the railroad and privately owned cars. Complete comparative statistics as to the improvements effected are shown in the table on page 1190.

The results were obtained by the efficient use of a number of methods, chief among which are the following:

The installation of the "maintracker" method of handling freight trains, as described in the *Railway Age* of April 7.

Careful checking by the operating executives of the car movement, facilitated by a comprehensive system of reports.

Particular attention to the disposition of foreign freight equipment, to bad order cars of all classes, and to the distribution of empty equipment for loading.

General Methods Used

Periodical meetings are held at each of the principal terminals on each division to promote better car handling. Frequent motor car trips are made by representatives of the general superintendent of transportation, to reach agents and others at smaller stations and discuss with them the current car distribution instructions and proper methods of handling cars.

Monthly questionnaires asking 10 questions pertaining to car service rules, car distribution instructions, per diem, etc., are issued from the office of the general superintendent of transportation through the superintendents' offices, which every trainmaster, traveling car agent, car distributor, agent, yardmaster, yard clerk and others concerned in the handling of equipment are required to fill out. Each questionnaire is graded, 10 points being allowed or deducted for each question correctly or incorrectly answered. The grades obtained by each employee are then generally published on the division. This creates much competition and interest among the employees in their effort to excel one another in their grades and, incidentally, improves their knowledge of car handling.

The reports rendered include the following:

Report of cars on hand.

Report of loaded cars on hand 24 hours or more for move-

ment, placement or disposition and empty foreign cars on hand 24 hours or more for movement.

Report of cars on hand 48 hours or more for loading or unloading.

Report of loaded cars containing commercial freight on hand 72 hours or more for placement, unloading, disposition, movement or bad order.

Report of cars on hand containing company material.

Yardmaster's turn-over report.

Report of cars in bad order awaiting placement in the shop.

These reports are rendered daily and each superintendent prepares a mailing schedule for his division. This provides that the reports be forwarded to his office from each terminal, yard or station on certain specified trains. A record is maintained in the superintendent's office, giving the time of arrival of each of the reports and this is checked daily to insure prompt transmission. The reports themselves are also checked daily for delayed cars and the necessary action is taken immediately to get the delayed cars moving.

Complete Files for Review

Complete files of the standard reports, bradded together in station order, are sent to the general superintendent of transportation for review and record, together with copies of all notes, telegrams and letters showing the action taken in connection with delays to cars or errors in compilation. This transmission is also governed by a fixed schedule, providing for the mailing of the reports on certain specified trains.

A complete set of each of the reports is maintained for at least 30 days in the offices of yardmasters and others who render or are supplied with copies of these reports. These are kept in date order in places where they are readily accessible to all concerned.

Every trainmaster, while out on his district, carries with him a complete set of all yard reports for the preceding day covering his entire district. In all cases of unusual delay to cars, he can thus take immediate action to rectify the situation on the ground. In addition, a complete set of the latest yard reports is supplied to general operating officials going over the line for each division they are traversing, so that they may be in constant touch with the car situation.

A general report is also placed in the hands of each superintendent and trainmaster each day, which enables them to know the total cars of each class ordered, supplied and on hand, loaded and empty, good and bad order, on the division, as well as on the system and the percentage of total cars on the system to ownership. At least once each month, an analysis of the system daily car report by divisions is made in the office of the assistant general manager. This is sent to each superintendent, with the request that it be analyzed by himself and his staff, with a view of reducing the cars on his division to the actual requirements of the business offered.

Details of the Reports

The report of cars on hand is a summary showing the situation as of 7 a.m. daily and includes all cars except those stored for an indefinite period, which are reported in detail twice a month only. On other days, the record on the daily report shows the total number of cars on each storage track. In addition to being a record of all cars on hand, this report supplies the basis from which the station demurrage records and various yard reports are compiled. Cars situated at non-agency stations are included in this report from the information obtained from the blind siding report submitted by the conductors. This report contains information as to the car number, initial, kind, capacity, contents, destination, consignor and consignee. It also shows the date of arrival, the date placed and the number of days detained. A complete history of the detention is given under the latter heading, including delays for placement, unloading, empty, loading, for disposition and for movement, as well as for bad order. Space is also provided for an explanation of any delays.

The report of loaded cars and empty foreign cars on hand 24 hours or more for movement is compiled from information obtained from a check of waybills, switch orders and other records and includes all cars of the classes named which have been on hand 24 hours or more for road movement or delivery to a connecting railway, including cars that are or have been in bad order. This report also includes cars that have received lading from transferred cars, the lading of which has sustained a delay of 24 hours or more. The information given on this report is similar to that given in the report of loaded cars on hand, except that the track location of each car is also shown.

The report of cars on hand 48 hours or more for loading or unloading includes all such cars except those

Three of the Instruction Books Covering Car Handling

loaded with company material and the information is obtained from the report of the cars on hand. It is, in effect, a summary of that report, showing the cars in need of particular attention. The report of loaded cars on hand 72 hours or more for placement, unloading, disposition, movement or bad order is the same as the preceding report, except that it includes cars of longer delay. As may be imagined, it receives close scrutiny from all concerned and calls for immediate action.

The report of cars on hand containing company material is prepared by the office trainmaster of each division, except at a few of the larger terminals. The information required is obtained from the basic report of cars on hand, and includes as well the track location of each car. In addition to the operating officers receiving the other reports, copies of this report are also supplied to the division engineer, the master mechanic and the division storekeeper.

The yardmaster's turn-over report is compiled at all terminals and yards where yardmasters are stationed, and gives information as to the track number, the yard and the classification.

Bad order cars are covered by four reports, bad orders awaiting placement in the shop, statement of cars transferred, empty bad orders, and a report of bad order, loaded, transfer and adjustment cars on hand. These contain all the necessary information regarding the car, the latter report being particularly inclusive. It gives the car number, initial, kind, the track location and

the class of repairs required. It also gives the month, day and hour the car was found in bad order, ordered transferred, placed in the shop or for transfer, ordered out of the shop or off the transfer track, and switched out of the shop or off the transfer track. Separate columns are provided in each instance for showing the number of days and hours consumed in each of these operations.

The Car Cards

The car carding system is unusually complete, comprising no less than 20 separate cards that are standard over the railway, as well as many other cards that are used within the limits of special districts.

The standard cards include the following:

Perishable	Re-ice
Standard district	Special
Hold	Automobile
Weigh	Grain for inspection
Company coal	Hay for inspection
Company material	Delay

The purpose of most of these cards is obvious from their names. The standard district card is used for carding cars to team tracks, industries, freight houses and other loading or unloading points. The special card is attached adjacent to the road haul or district switching cards on all cars requiring special handling, while the delay card is attached in addition to the regular card on all delayed loaded cars.

A complete set of bad order cards is also used, as follows:

Bad order empty	Bad order return when empty
Bad order transfer	Bad order loaded
Bad order place on rear end of train	Bad order shop when empty
	Bad order refused

These cards contain lists of defects and the car inspectors check those which have caused the car to become defective. In order that light and heavy repair cars may be differentiated at a glance, the car inspectors apply the bad order cards to the car with the long dimension vertical if for light repairs or horizontal if for heavy repairs.

Standard commodity car cards are also used where necessary. These include the following cards:

Refrigeration or ventilation inspection	Merchandise
	Outbound billing record
Flour and other sacked products	Bulk grain
	Rough freight

Instruction Books Supplied

One of the prime objects in installing this system of car handling was to secure uniformity of practice at all points. To aid in this, a pocket size, loose-leaf, instruction book of 122 pages has been issued, which contains in detail the necessary information covering the standard yard and mechanical reports covering cars, instructions as to the use of car cards and all other pertinent details. This booklet describes each report and car card in detail, with instructions as to how and when the reports are to be prepared and car cards applied.

It also contains a list of the various terminal zones and districts, with the industries situated in each. Zones, subdivided into districts, have been established at the larger terminals to aid supervision and to fix the responsibility for car movement. The St. Louis terminal, for example, is divided into 4 zones and 20 districts, the Kansas City terminal into 2 zones and 15 districts, etc.

This zoning plan has aided materially in preventing cars from straying away from supervision and becoming lost for a day or two or longer. The comprehensive reports from each district give the supervisory officers a complete line-up as to the location of each car so that delays may be handled at once with the officer in charge of each zone.

Every one concerned with the movement of foreign cars on the Missouri Pacific is required to familiarize himself with the car service rules. In addition to personal instruction from the supervisory officer, a loose-leaf instruction book of 61 pages is provided which contains all the detailed information necessary. In this, as in other features of car handling, uniformity of practice is striven for and attained.

The instruction book gives all the pertinent car service rules, with explanations in parallel columns describing the local application of these rules to the Missouri Pacific. The book contains a map of the Missouri Pacific, showing the junction points to all direct connections, supplemented by a list of the railways, giving all possible junctions for each railway. Where switching charges by an intermediate line are involved at any junction point, the amount of these charges is given. A map of the United States, Canada and Mexico is also shown, for aid in the home routing of indirect connection cars. To assist all concerned in properly loading and routing these cars, the "home" territories have been divided into 12 zones. The indirect connections are also listed, with the zone designations and the home route given. As a further assistance, a chart is also shown which gives the trunk line connections of the M. P., together with a list of railways with which they have direct connections.

So that there may be a minimum of delay in disposing of surplus empty foreign cars, all empty cars, except system coal cars, enroute to the mines for return loading, are billed and home route data always accompanies foreign cars, whether loaded or empty. The junction agent or yardmaster fills out the home route portion of the empty car waybill and the home route card for each foreign car received under load and attaches the information to the loaded car waybill.

The agent or yardmaster at the destination, in the absence of loading or other instructions from the office

Comparative Car Records—Missouri Pacific

Calendar Year	Per Diem Credit	Per Diem Debit	Ownership Average Per Month	Calendar Year	System Traffic Cars On System—Avg. Per Month *	Forn. Traffic Cars On System—Avg. Per Month †
1923	$2,083.84		46,911	1923	21,930	23,124
1924		$576,140.76	45,573	1924	26,902	16,865
1925		172,649.74	47,219	1925	28,468	15,056
1926		136,620.08	46,656	1926	27,445	16,094
1927	228,460.14		47,094	1927	28,692	13,675

Miles Per Car Per Day Av. Per Mo.	System B. O. Cars On Line Av. Per Mo.	R. R. Owned Frt. Car Miles	Private Line Car Miles	All Traffic Cars On System—Avg. Per Month	Total Cars Rev. Frt. Loaded Locally	Total Cars Rev. Frt. Rec'd from Connections
26.61	3,837	389,787,935	103,436,750	50,787	972,300	375,835
33.02	3,871	451,118,209	144,481,441	49,287	1,102,714	424,776
37.22	3,845	480,742,424	195,696,408	49,787	1,200,584	443,116
39.66	2,840	504,975,714	217,855,511	49,938	1,211,696	479,871
38.80	2,199	492,391,739	198,408,529	48,781	1,102,204	484,047

* Excluding caboose and work cars.
† Includes switch and bad order cars.

trainmaster is permitted to use three methods of disposition at his discretion. He may send the cars home on a direct connection to the home road at the nearest junction, or send such cars to the road from which they were received under load, if such road is also a direct connection of the home road, or send the cars home on other than a direct connection to the road from which the car was originally received, at the junction where it was received. The choice is governed by the method which will involve the least empty car mileage and expense. In order that full advantage may be taken of reciprocal arrangements with various lines for short routing cars home, it is an absolute rule that no foreign car be moved empty for more than 300 miles except on the authority of the general superintendent of transportation.

One of the features of the instruction book is the list of examples supplied. This has the value of being practical rather than theoretical, since it represents a collection of mistakes that have actually been made in the home routing of cars. The examples show what should have been done with the car. More than 50 such examples are given, covering practically every conceivable contingency.

The entire theory of the Missouri Pacific's system of car handling is to secure uniformly correct practice. The idea is to educate the men as to car values, that per diem actually means a dollar out of pocket for each foreign car day. The instructions supply the men with the weapons to combat any unnecessary car expense and the success of the system is indicated in the figures quoted in the first paragraph.

Little Chance for Railway Legislation

WASHINGTON, D. C.

WITH Congress about to adjourn it now seems likely that the session will pass without change in the laws relating to railroads. In fact there has been very little prospect of railroad legislation since the session started last December, and, as compared with previous sessions, very little attention has been paid to the subject. There was some hope a few weeks back that the House might pass the Parker railway consolidation bill, on which more work has been done than any other bill affecting railway transportation, and which was reported favorably by the committee on interstate and foreign commerce on April 13 after extensive hearings and protracted work in committee. If the bill could be passed by the House not too late in the session there was always a possibility that the Senate might act on it, but recently even the advocates of the bill have given up the idea of pressing it at this session. The Senate committee on interstate commerce held a few perfunctory hearings on the similar Fess bill and then referred the matter to a sub-committee which has done nothing but await the action of the House.

Two railroad bills have been passed by the Senate, the Pittman bill, S.656, to relieve certain classes of short lines from the provisions of the recapture clause, and the bill, S.2107, to require the use of steel railway post-office cars, but the short line bill has encountered some obstacles in the House committee and it is understood that its chances are now uncertain. The Senate has also passed S. J. Res. 99 to amend the Hoch-Smith resolution to include specific reference to "fisheries." The Senate committee has also reported out the modified Gooding long-and-short-haul bill, merely following its practice of former years and without holding additional hearings, and it ordered a favorable report on Senator Mayfield's bill, S.2309, providing that the authority of the Interstate Commerce Commission with respect of certificates of public convenience and necessity shall not extend to the construction of lines wholly within one state if the laws of the state require certificates from local authorities.

To date the above covers all the action taken at this session on railroad bills, although almost the usual number of such bills have been introduced. Earlier in the year it was thought that some attention might be given to the Newton bill to amend section 15a of the interstate commerce act and the House committee at one time planned to have hearings on it, but the subject was dropped. Also several bills have been introduced in both houses to restrict the minimum rate power of the commission, but nothing has come of them. Bills have been introduced recently to repeal the Hoch-Smith resolution, but they were born of the controversy relating to the lake cargo rate case and came too late to attract any attention in committees.

Hearings have been held by the House committee on two bills in which the railways are vitally interested, the Parker bill to provide a plan of regulation for interstate motor vehicle operation and the Denison bill to provide for an increase in the scope of operations of the Inland Waterways Corporation. The former failed to arouse sufficient affirmative interest, while it did invite several controversies, and a sub-committee to which the bill was referred on May 12 recommended to the committee a very short, simple substitute which would merely prohibit the operation of motor vehicles in common-carrier passenger transportation on the public highways without a surety bond issued by the Interstate Commerce Commission. On May 15 the committee decided to defer action on the bill for this session.

The Denison bill, to increase the capitalization of the Inland Waterways Corporation to enable it to extend its services on tributaries of the Mississippi river other than the Ohio, containing provisions under which the Interstate Commerce Commission would be directed to establish joint traffic arrangements between water carriers on the rivers and the rail lines without a hearing, was passed by the House on May 17 with comparatively little debate and without a record vote. The bill was referred by the Senate to its committee on commerce, which held hearings on it on May 19 and 22.

The committee on May 23 ordered a favorable report on the Denison bill with an amendment directing the Secretary of War to cause an investigation and survey to be made of the inland water route from Boston, Mass., to Beaufort, S. C., with a view to determining the amount of actual or potential commerce for such a route and the feasibility and advisability of extending the service of the Inland Waterways Corporation to the waterways included in such routes or any section of it.

The Senate's interest in railway transportation has been evidenced almost exclusively by manifestations of its general disposition to investigate and advise other government bodies.

In one respect this session of Congress has been different from earlier ones. Very little has been said during the session on the subject of the Pullman surcharge. Although Congress has been bombarded with propaganda from the traveling salesmen's organizations, only a few bills on the subject were introduced and they have received no attention. That hope springs eternal, however, is indicated by the fact that another bill to abolish the surcharge was introduced as late as May 14 by representative Hull, of Tennessee, and the Senate committee on May 17 ordered a favorable report

on the bill introduced by Senator Robinson. In one session of Congress two or three years back bills of this kind were introduced by some thirty members.

Emergency Board Finds Strike on Orient Unjustified

WASHINGTON, D. C.

THE first emergency board appointed by the President under the terms of section 10 of the railway labor act has submitted to President Coolidge a report of its investigation of the wage dispute between the Kansas City, Mexico & Orient and its train service employees, finding that in view of its financial condition the road is not at present justified in paying to the employees represented by the four brotherhoods standard rates of wages and that the employees should either accept the advances offered them, amounting to less than they had demanded, or arbitrate their wage dispute under the act. As to eight unadjusted grievances of which the employees complained the board finds that the road should become a member of the Southwestern Train Service Board of Adjustment so that it may function in relation to them.

The board also finds that the brotherhoods are not justified in carrying out their strike order, which was made effective April 29, but which was deferred, after the President had issued a proclamation creating the emergency board, by an agreement of both sides to make no change in the conditions out of which the dispute arose for the required period of 30 days after the board should have submitted its report.

The report of the board shows that it held hearings from May 11 to May 17, at which representatives of the road and of the brotherhoods presented their views. It then recounts the history of the dispute, showing that in 1923 the Railroad Labor Board, on application of the Orient, authorized a decrease in wages for the train-service employees below the standard rates in view of the financial condition of the road, with an understanding that the rates would be advanced when the earnings permitted. On August 23, 1927, the brotherhoods requested an increase to the standard rates, which was refused, but on April 10 the company offered certain increases less than the amounts asked, and this was rejected by the brotherhoods. Mediation proceedings followed, during which the company expressed a willingness to arbitrate but the representatives of the employees were unwilling, and after a strike had been ordered for April 29 the President issued the proclamation.

The findings of the report then continue in part as follows:

That the Orient company before its differences were in mediation, offered to increase the rates of pay of the employees represented by the four brotherhoods in an amount which would, it claimed, increase its annual payroll expense approximately $62,000; that this amount is approximately $47,000 less than the amount asked by the members of the four brotherhoods' employees; that by negotiating with other classes of employees receiving lesser rates of pay increases were mutually agreed upon in such amount that the annual payroll was increased approximately $35,000; and that the rate of increase offered the brotherhoods was slightly greater than that negotiated with other classes of employees.

That the road ever since its organization in 1900 has often been in desperate financial straits. . . . The financial history of the enterprise is one of heavy loss and constant difficulty. It has been through two receiverships and reorganizations, the first during 1912-15, the second during 1917-1927. The final proceedings in the recent receivership are now before the Federal court.

That there has been a marked increase since 1923 in the traffic in cotton, cotton seed, livestock and livestock products; that the discovery of oil fields in southwest Texas has resulted in large additional outbound traffic in oil and in large additional inbound traffic in oil-field supplies, in building materials and in other commodities to satisfy the needs of a rapidly growing oil-field population; that this additional income now enables the carrier to begin to fulfill its 1923 promise of wage adjustments to its employees; that the evidence fails to show that the present oil-field traffic can be measured in terms of permanent annual revenue or that it will at all increase; that in fact it is likely to decrease because of the building of pipe lines for the transportation of oil from a proven field; and that therefore the revenues of the carrier are still in a precarious condition.

That a stoppage of the operations of the Orient would be a substantial interference with interstate commerce; that it would result in depriving a large number of citizens in Kansas, Oklahoma and Texas, who have settled along the line or in tributary country, from essential railway transportation; and that it is of vital public interest that this service be maintained.

That the employees, in the hearing before the Emergency Board based the rates of pay, covered by their demand, upon the award of the Chicago arbitration of the Western Carriers with the conductors and trainmen rendered in May 1927; while the carrier claims that it is governed by the decision of the Labor Board of 1923 under which it was authorized to pay substandard rates. In the opinion of the board this carrier was not a party to nor is it bound by the award of the Chicago arbitration, but that the carrier is now and in the future morally bound by its promise, made in connection with Railroad Labor Board's decision 1933, to restore standard rates of pay to its brotherhood employees and, as nearly as such standards can be determined, to all other of its employees as soon as operating revenues will permit.

That in view of the accumulated financial difficulties of the carrier and inadequate earnings to meet current needs of maintenance, the carrier is not at present justified in paying rates of wages to the employees represented by the four brotherhoods higher than the advances now proposed by the carrier, having due regard to the maintenance of the road and the equitable compensation of employees in other branches of service.

That the four brotherhoods are not justified under the circumstances stated in carrying out their strike order, and should either accept the advances offered them, or they should arbitrate their wage dispute under the Railway Labor Act; and if they accept the increase offered it should be made effective by the carrier from April 16, 1928, the date on which increases to other employees took effect.

That the Railway Labor Act contemplates, as an important instrumentality in its administration, the establishment of boards of adjustment for the settlement of grievances and provides for their creation by sub-division 1 of Section 3; that in sub-division 2 of the same section it provides that in lieu thereof the carrier and its employees may adopt such agreement as they choose for the settlement of disputes; that the four brotherhoods are members of the regional boards of adjustment now functioning for the employees represented by them; that these boards were created in three of the four regions some years ago by mutual agreement between a large number of carriers and the four brotherhoods and are the outgrowth of many years of uninterrupted contractual relationship between the parties; that these boards decide disputes arising out of grievances or out of the interpretation or application of the complicated and technical agreements concerning rates of pay, rules or working conditions not adjusted by the parties in conference; that it is essential in the interests of peace and harmony under the Railway Labor Act that the carriers having so-called standard rules governing working conditions in train and engine service should provide an avenue for the settlement of unsettled grievance claims with these organizations which, by their contracts or agreements in effect with practically all carriers in each region, are automatically members of regional adjustment boards when created; that the Orient company does not belong to such a board; that there is functioning with headquarters at St. Louis, Mo., the Southwestern Train Service Board of Adjustment; that the brotherhoods are members thereof; that though the carrier offered to take the eight grievance cases involved in the present dispute to this board it has thus far refused to become a member; that it has proposed to the brotherhood a form of agreement pursuant to sub-division 2; that they declined it; that they are justified in declining it; that the carrier is not justified in refusing to become a member of the Southwestern Board of Adjustment; that it should become a member forthwith; that such board would care for the eight unadjusted grievances of which the brotherhoods are now complaining, and of future grievances; and that it is not the province of this Emergency Board to determine the merits of the individual cases.

Heavy Rock Cutting Was Necessary in Rounding the Cliff at Bald Friar

Heavy Work Features Line Relocation on the Pennsylvania

Power development on the Susquehanna river necessitates elevating C. & P. D. branch over 16 miles in rugged, rocky territory

OWING to power development on the lower Susquehanna river and to certain changes in operating conditions on the Pennsylvania, the Columbia and Port Deposit branch of that road has been practically transformed within the last 20 years, from a water level, light traffic branch line to a high level, heavy traffic auxiliary line in the Pennsylvania's north and south transportation system. The most recent change in this line, which is now about completed, is the realinement and double-tracking of about 16 miles, in order to seek higher elevations and to fit the line for still heavier traffic. This change, which has been under way since April, 1926, has involved approximately 1,490,000 cu. yd. of earth and rock excavation, the driving of three tunnels, with a combined length of 875 ft., and the placing of approximately 31,000 cu. yd. of concrete in three major bridge structures. This extensive work was made necessary by the construction of a large dam and hydro-electric power development at Conowingo, Md., on the Susquehanna river, which impounds a reservoir over the old site of the Pennsylvania's tracks.

Power Development Caused Previous Change in Line

The Columbia and Port Deposit branch of the Pennsylvania is a single-track line with 100-car sidings, approximately 43½ miles long, extending from Columbia, Pa., on the east and west main line of the Pennsylvania, southeasterly to Perryville, Md., on the main line of the Pennsylvania between Philadelphia and Washington. Throughout its length, this line follows closely the east shore of the Susquehanna river, and winds its way up the deep and crooked valley which is formed by high rock bluffs on each side. Until recent years this branch was a relatively unimportant line, but since the Pennsylvania has shifted most of its north and southbound freight business from the Northern Central, one of its lines, to the C. & P. D. branch, because of more favorable operating conditions, this line has become of considerable importance, carrying about 30 heavy freight trains daily, in addition to four passenger trains. Originally the line was practically a water level route, rising on a gradual grade with the river throughout its length to Columbia. In 1906 the first important change was made in the line, when it was necessary to relocate several miles of track on higher ground, owing to the construction of a hydro-electric power development and a 60-ft. dam in the river at McCall's Ferry, Pa., about 19 miles south of Columbia.

The new power development at Conowingo, which is

Temporary Timber Trestles Were Used in Constructing the Larger Fills

being undertaken by the Philadelphia Electric Company, is located about 15 miles south of the McCall's Ferry dam, and about 34 miles south of Columbia. The new dam at this point, which is of concrete construction, is 4,630 ft. long and about 90 ft. high, and is provided with suitable spillways and with a highway extending across its crest. This dam slacks water almost to the tail race of the McCall's Ferry dam, and forms a lake with a surface area of about 8,600 acres. Ultimately the new power facilities will develop 594,000 hp. and will represent the second largest development of its kind in the country.

View Showing New Line at Williams Tunnel, Well Above the Level of the Old Line.

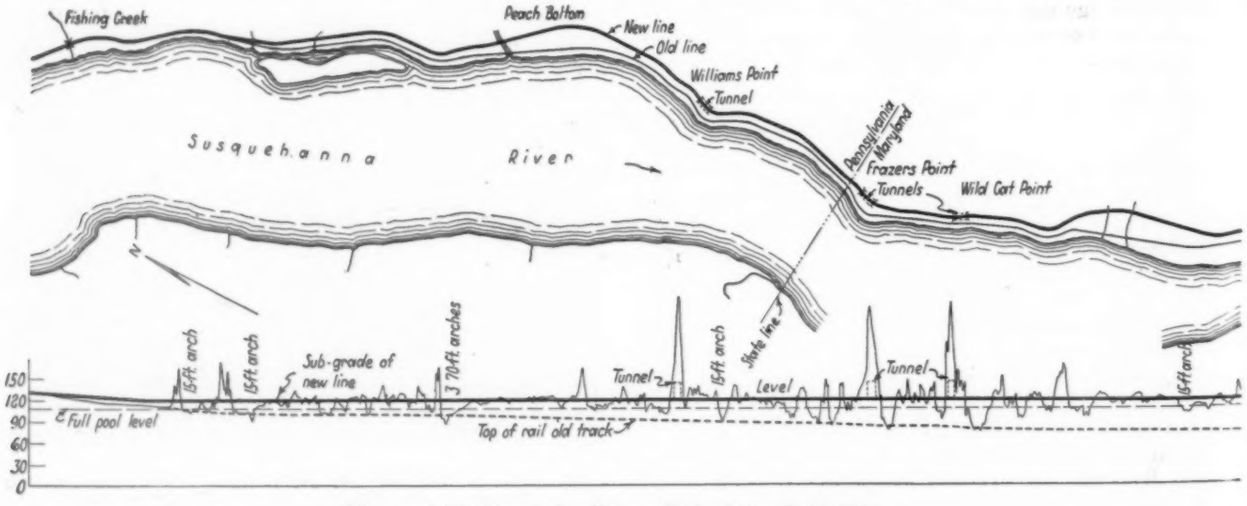
Rapid Progress on Railroad Work Was Necessary

When actual construction was started on the Conowingo dam in March, 1926, with the idea of having the power development in service by the summer of 1928, it became evident that the work of raising the tracks of the Pennsylvania out of the reservoir area would have to be rushed in order not to delay the power development work. In planning this work, consideration was given to the greater importance assumed by this line during the last few years, and it was decided to build the grade throughout for double track, and to provide only double-track roadway structures.

As laid out, the relocated portion of the line extends for 16 miles, from Fishing Creek, Pa., on the north, to Port Deposit on the south. At the north end, the new alinement lies high up along the east slope of the river valley, following closely the 120 contour, or uniformly about 12 ft. above the full pool level of the new reservoir. So located, the line extends on practically a level grade for a distance of about 10 miles to a point about 3,000 ft. north of the dam, from which it descends on a 0.35 per cent compensated grade for a distance of about six miles to the level of the old line at Port Deposit. The point of greatest difference in elevation between the new and old lines is near the top of the 0.35 per cent grade on the new line, where the new alinement lies about 70 ft. above the old line. As planned, the new line was graded for double track, although at present it is occupied only by a single track with three 100-car sidings. Owing to the rugged and rocky character of the river valley, the new line is largely on curves, although the maximum curvature was held down to six degrees, and such curves occur only in four places.

Difficult Grading and Safety Precautions Retarded Work

Owing also to the character of the territory through which the line was run, and the exacting speed with which the relocation had to be carried out, the work involved was unusually heavy and many problems were encountered. In all, approximately 1,490,000 cu. yd. of grading was necessary, of which, about 880,000 yd. was obtained from cuts and the remainder from borrow. Of the cut excavation, approximately 67 per cent was solid granite rock, interrupted at places by seams of quartz. Another source of difficulty in the work was that the mountainside was so precipitous at many points that the new line came almost directly above the old line. This made precautions necessary in both blasting and filling operations so as to keep the old line open and to protect the heavy traffic moving over it.



Map and Profile of the Upper End of the Relocation

In undertaking so large a project with so short a time limit, the grading work was started at a comparatively large number of points and a large force of men and machinery was put to work. During the early operations, an average force of about 700 men was employed, this being increased gradually until as many as 1,500 men were at work during the track laying stages. The equipment used in the excavation work consisted principally of four standard railroad shovels with 2½-cu. yd. dippers, one 2½-yd. shovel mounted on caterpillars, three full revolving caterpillar shovels with 1¾-yd. dippers, and one full revolving caterpillar shovel with a 1¼-yd. dipper.

Placing of the excavated material in the fills was effected by constructing temporary timber trestles across the sags, and by side dumping from these trestles. Narrow-gage equipment was used exclusively in this work, and consisted principally of four 14-ton, and seven 8-ton gasoline locomotives, two 16-ton steam locomotives, and a large number of 5-yd. contractor's side-dump cars. At certain points where shallow fills were encountered, tractors and 5-yd. dirt wagons were used effectively.

In some places where the new line is almost directly above the old line the slope of the new fills encroached on the old alinement. At most of these points, single track embankments were made so as to avoid fouling of the old line. However, in spite of this, it was necessary in several instances to move the old line toward the river as much as 40 ft.

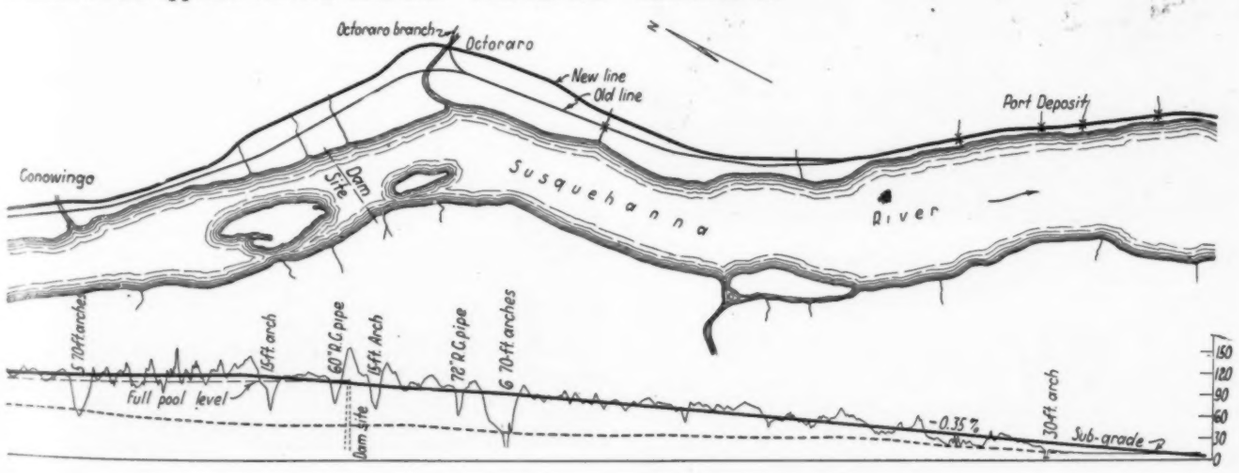
In making the extensive cuts on the main line, which involved the removal of approximately 600,000 cu. yd. of solid rock, the rock was drilled and blasted out, and then removed by the excavating equipment. Where the new and old lines came in close proximity, this work required unusual precautions to safeguard traffic on the old line, and therefore, blasting was limited to moderate shots, and the old line was patroled at all times while the work was under way. The equipment used in this work consisted principally of 19 Ingersoll-Rand portable, gasoline-driven air compressors, each with a capacity of 309 cu. ft. per min., and a large number of jack hammers and tripod drills. A well drill, which was also included in the equipment, was used mainly in some of the deeper cuts remote from the old line, where heavy blasting could be carried out safely.

Three Tunnels and Three Bridges Were Necessary

While the entire new line involved a continuous succession of large cuts and fills, the largest cut made occurred almost opposite the new dam site. This cut had a maximum height of about 55 ft. and required the removal of approximately 84,000 cu. yd. of solid granite rock. A number of other large cuts on the line also exceeded 15,000 to 30,000 yd. of excavation. To avoid three extensive rock cuts, which would have been from 130 to 145 ft. deep, three tunnels were driven on the new line, having a total length of 875 ft. These tunnels are located on the north half of the line, at Wild Cat Point, Frazers Point, and Williams Point. The largest of these tunnels is the one at Frazers Point which is 365 ft. in length. The other two tunnels are each about 260 ft. long. Both the Williams Point and Frazers Point tunnels are on six-degree curves, while the one at Wild Cat Point is on tangent. All of the tunnels were built for double track and are semi-circular in section, 30 ft. wide and 24 ft. high at the center.

All Three Tunnels Were Cut Through Solid Rock and Are Without Lining

Owing to the nature of the rock through which the tunnels were drilled, none of them required lining of any kind. Each of the tunnels was driven by the top heading method, the bench being removed in two lifts. Mucking was done by a ⅞-yd. gas-electric shovel, the engine-generator set being operated outside of the tunnel in each instance.



Map and Profile of the Lower End of the Relocation

Most of the sags in the new line are crossed on rock and earth fills, requiring from a few thousand yards for the smaller fills, to as much as 89,000 cu. yd. in the largest fill just south of the Wild Cat tunnel. At three points on the line, namely Peach Bottom, Pa., and Conowingo and Octoraro, Md., where the new line crosses streams, double-track, reinforced concrete arch bridges were built. These bridges are of the solid barrel, rock-filled, multiple-span type, with 70-ft. arches, the one at Peach Bottom having three arches, that at Conowingo five arches, and the one at Octoraro six arches.

In constructing these bridges, Blaw-Knox steel centering was used, the work being so scheduled that one set of centers for three spans was sufficient to carry out

Constructing One of the Solid-Barrel, Rock-Filled, Multiple Span Arch Bridges, Using Steel Centering

all of the work on the three bridges without delay. Concrete for the bridges was proportioned according to the water-cement ratio, using Blaw-Knox steel storage bins, batchers and inundaters, in conjunction with one-yard mixers. Two classes of concrete were used in the work, that in the arches, which was required to have a compressive strength of 2,500 lb. per sq. in. in 28 days, and that in the abutments, which was required to have a strength of 2,000 lb. at the same age. In the three bridges, there is a total of 31,000 cu. yd. of concrete, all of which was chuted into place from towers.

In addition to the three major bridges on the line, nine smaller concrete arches were constructed, seven having a 15-ft. span, while the other two have spans of 20 ft.

One of the Multiple-Arch Double-Track Concrete Bridges on the New Line.

and 30 ft. respectively. For the smaller openings under the track, reinforced concrete pipe was used generally, a total of 3,260 lin. ft. of 72-in., 60-in., 48-in., 24-in., and 18-in. pipe having been placed under the new line.

In relocating the Columbia and Port Deposit branch, the new line was built with a much stronger and more permanent track structure to carry the heavy traffic to which the line has been subjected in recent years. It has been laid with 130-lb. rails, has creosoted ties throughout, with the exception of three half-mile test sections of reinforced concrete ties, and has 12 in. of slag or cinder ballast under the ties. As indicated by the large quantity of reinforced concrete pipe used, much attention was given to the problem of securing adequate drainage, owing particularly to the fact that the line is on a steep hillside, and furthermore, because the north end of the line is on a practically level grade for about 10 miles. In solving this problem, a ditch of adequate size was provided where necessary along the up-hill side of the track with cross drains under the roadbed at intervals ranging from 400 to 500 ft.

During the early period of the work about 650 men were employed, housing quarters being afforded in small temporary camps along the line. When the track work was begun, this force was increased to 1400 to 1500 men, many of whom were quartered in camp cars which were moved forward as the work progressed. With such large forces, and with operations extending over so great a distance, it is interesting to note that one of the first steps in the work was to install a telephone line over the new route so that those in charge could keep in close touch with the progress made each day. Through this medium, much was accomplished in directing and coordinating the work, and in making it possible to open the new line to service on October 2, 1927, or within 19 months after the first grading was undertaken. At the present time the work on the new line is practically completed with the exception of about 7,500 ft. at the south end in the town of Port Deposit, where legal difficulties concerning street crossings have held it up. Pending settlement of these difficulties and the completion of the work, a temporary grade of one per cent, about 2,500 ft. long, forms the south end of the new line, on which it is necessary to provide pusher service for all of the heavier trains. While the relocation of the C. & P. D. branch was carried out in accordance with plans developed by the Pennsylvania, under the direction of T. J. Skillman, chief engineer, and J. F. Murray, assistant chief engineer, the actual work was done under contract by the Arundel Corporation, Baltimore, Md., which also had a contract covering the construction of 3,600 ft. of the new Conowingo dam. The Pennsylvania was represented in the field throughout the work by F. W. Heckel, Jr., assistant engineer. With the exception of the costs for actual betterments in the physical character of the new line, such as those for the additional fill for double track, a heavier track structure, etc., which are being paid by the Pennsylvania, the cost of the relocation work has been borne by the Philadelphia Electric Company, which is carrying out the power development project.

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Multiple Unit Train, Tokyo-Yokohama Line, Japanese Government Railways

Safety Section at Buffalo

A remarkable shop record—Roadmasters' experiences—Boy Scouts

THE first day's deliberations at the eighth annual meeting of the Safety Section, American Railway Association, held at Buffalo, N. Y., on May 15, 16 and 17, were reported in the *Railway Age* of May 19, together with a reprint, slightly abridged, of a paper by trainmaster H. H. Larson, of the Union Pacific, recounting the highly successful regulations by which accidents to yard employees have been very thoroughly eliminated at Council Bluffs, Iowa. Following is a report of the proceedings of the second day.

Greetings From Operating Division

The first speaker on Wednesday was E. E. Calvin, vice-president of the Union Pacific, representing the Operating Division of the American Railway Association, assuring the members of the interest of the managements in the doings of the Safety Section. He told also of some of the methods of the Union Pacific in making its unparalleled safety record among employees. The fundamental problem said Mr. Calvin, is to appoint safety supervisors who can educate, sympathetically. Ability as a worker or as a talker, or both, may be insufficient. And to this supervisor, not the general manager or other officers, is due the credit for the successful safety records. In the Council Bluffs yard (referred to above), 31 engine foremen carry four-year merit cards (freedom from accidents for four years). The U. P. track foreman's merit card is a metal plate on his motor car, showing his years of freedom from accident.

L. B. Allen (C. & O.) graphically described the hazards of track work, in which casualties are 8 to 10 per cent greater than in all railroad departments averaged together. But stabilizing of employment and the evening up of work by the yearly budget are producing better and safer men. The speaker compared the training of employees to the training of boys and girls in the moral law—the Christian religion, through the family and society, educates them unconsciously from youth up. Safety specialists can use like processes. "My children, romping in the yard, automatically halt at the curb, having been taught street dangers." The Chesapeake & Ohio safety lecture cars goes to the men, even at remote sidings; it reaches the lowest grades.

R. Rowland, section foreman on the Lackawanna, told of the foremen's association on that road, started in 1922. Quarterly meetings are held. On 256 sections there are 285 motor cars; also many trailers. Rules are strict and there have been no derailments of these cars because of speed. The greatest danger to these cars is the automobile, and the positive stop at crossings is now enforced, even at little-used crossings. Chance-taking as to right of track is forbidden, regardless of cost. Cars have klaxon horns. Men must always be seated when riding. Use of motor cars and trailers has saved the expense of work trains in a great many instances. Foremen are provided with acetylene lanterns, deemed an important safety measure.

Safety on I. C. Terminals

J. J. Desmond, roadmaster, described conditions on the very busy eight-track and ten-track electrified terminal of the Illinois Central at Chicago. The trackmen, because of numerous trains, can work only about five hours a day. In the 12 months ending April 1, only three M. W. employees were injured; none have been killed by electric shock and only four injured. Employees are drilled every month in methods of resuscitation.

First Aid on C. N. R.

W. A. Booth, of the Canadian National, told of the elaborate organization, of many year's standing, by which employees of that road are trained in first aid. Teaching is done by trained non-medical men. The doctors are prone to be too technical in their language. The ideal aimed at is a condition where no employee can be injured but some one trained in first aid shall be found near.

N. Y. C. Shops at Elkhart

H. E. Warner, superintendent of the New York Central shops at Elkhart, Ind., employing 815 men (average) told how casualties there had been reduced from 109 (including one fatal) in 1925 to *one* in 1927. No case has been reported to the government in 16½ months (2,114,245 man-hours) and the minor injuries (less than three days off) have been greatly reduced. Injuries resulting in infection from neglect have been reduced to zero. The enthusiasm of employees is cultivated; when in 1925, injuries were reduced to zero for one month they were "the happiest bunch imaginable." Discussing underlying causes of shopmen getting hurt, the speaker put first on the list domestic troubles; second, unprotected machinery. New men undergo severe examination. Employees sending word "absent" are followed up. By 9 a. m., the true reason why a man is absent is found out; the wives become interested.

Address by President Aishton

R. H. Aishton, president of the American Railway Association, made a brief address conveying the greetings of the higher officers and praising the work of the Section. Referring to the highway crossing problem, he called upon the public to consider the elimination of existing crossings which are not manifestly necessary for the convenience or welfare of a community. The re-location of highways to avoid grade crossings should also be considered, as the cost of diversion is usually less than for elevation or depression.

Non-Train Accidents

G. H. Warfel, (U. P.) chairman of the committee on non-train accidents, presented a report suggesting that non-train accidents, not reported in detail by the government, should receive more attention. It is proposed that the Bureau of statistics, Interstate Commerce Commission, be asked to consider the publication of a more extensive analysis of these accidents; and the committee lists them in 15 general classes, each class being sub-divided into from three to ten items.

M. A. Hollingsworth (C. & N. W.) told of the activities of the North-Western in establishing troops of Boy Scouts and encouraging troops already organized. Vandalism has been stopped and petty lawbreaking checked. Safety patrols have been organized and in various ways the road has promoted good will and made for itself friends in many towns. Other roads have done more or less in this direction: The Lackawanna, the Big Four and the Atlantic Coast Line; the Missouri-Kansas-Texas, the Missouri Pacific and the Southern Pacific in Texas. In engaging apprentices, it is a good idea to select boy scouts.

C. M. Kimball told of the safety contests conducted by the Southern Railway. Trophies are awarded and all sorts of competition is encouraged; district versus district, shop vs. shop, division vs. division. Monthly reports are circulated.

C. B. Carroll, a switchman of the Missouri-Kansas-Texas, read a paper on hand-brake operation. There has been within a few years great improvement in brakes, but there is much room for further improvement. The chief need is better workmanship and maintenance on parts beneath the car body. The cable, in place of the chain, is an improvement of merit. The speaker condemned brake platforms placed 4 ft. to 6 ft. down from the top of the car.

St. Louis Yards

W. R. Petty, assistant superintendent, Missouri-Pacific, St. Louis, told of difficulties in establishing safe practice in the unsatisfactory conditions due to badly designed industry tracks built many years ago. The Missouri Pacific has 30 yardmasters in St. Louis, a number which suggests the magnitude of its business and the corresponding importance of the safety problem.

Michael P. Grady, a shop foreman of the Pennsylvania, read a paper on the ethics of good foremanship, citing instructive examples from his 16 years' experience. He ended with an eloquent appeal for higher living.

Dr. J. H. Parmelee of the Bureau of Railway Statistics, reported that the code of rules for vehicles on highways, which had been prepared by the National Conference on street and highway safety, has been already adopted by ten states. The code, prepared by the same Conference for city streets, has been printed, and copies have now been circulated with a view to getting criticisms, prior to definite adoption.

Dr. Parmelee, who is a member of the committee which awards the Harriman medal, announced that, in response to requests from railroads, the committee had concluded that, in the future, in calculating the degree of safety attained on any given railroad, the totals of casualties occurring at highway crossings, shall be given only one-fourth the weight that has been given to them hitherto. Employees not on duty are to be included in "other persons."

From the Superintendent's Standpoint

The last item on the program was a paper by Frank M. Barker, superintendent of the Lehigh Valley, at Buffalo, on safety and efficiency from the viewpoint of an operating officer.

Mr. Barker said, in part:

There isn't very much new about safety. It is simply the telling and re-telling of the old, old story. But this is minor and easy compared with the task of getting the officer, the foreman, the boss, to have a real, deep desire in his heart to protect and lead the workmen along safety lines; to get a supervisory officer who can awaken in the men a feeling of goodwill, respect and confidence.

The condition as to the men in the ranks can be acquired, but leadership is born.

The boss, whoever it may be, that is sympathetic and thoughtful, and deep down in his heart really believes in safety, is the man that is going to have the best safety record.

Just review your own records and you will find two shops, where about the same number of men are employed, the same conditions prevail, one with a rotten safety record, and one with a fine record. Two section foremen, one good, one bad—two railroad operating divisions, one good, one bad. In any industry, where an enviable record is being made, it will be found that there is at its head a directing officer who is enthusiastic for the welfare of his men. The General Electric Company is referred to as a humanized industry, because at its head is a great human leader and lover of men.

It seems to me we talk too much about the man in the ranks and not enough about the leaders of men. There is the type of boss who comes into the safety meeting and gives a splendid talk on safety, but it has no effect on the men, because they know he is not sincere. Some men at the head of safety departments, in presenting safety subjects to a group of employees do so from a standpoint of money loss to the railroad—that such and such an accident or death cost the railroad so much money. But to the men in the ranks such statements act as a boomerang. The man is immediately impressed with the idea that the company is only interested from the loss of money standpoint. Of course, it just naturally works out that where the safety record is the best the claim payments will be the lowest; but the matter cannot be successfully attacked from a dollar and cents viewpoint.

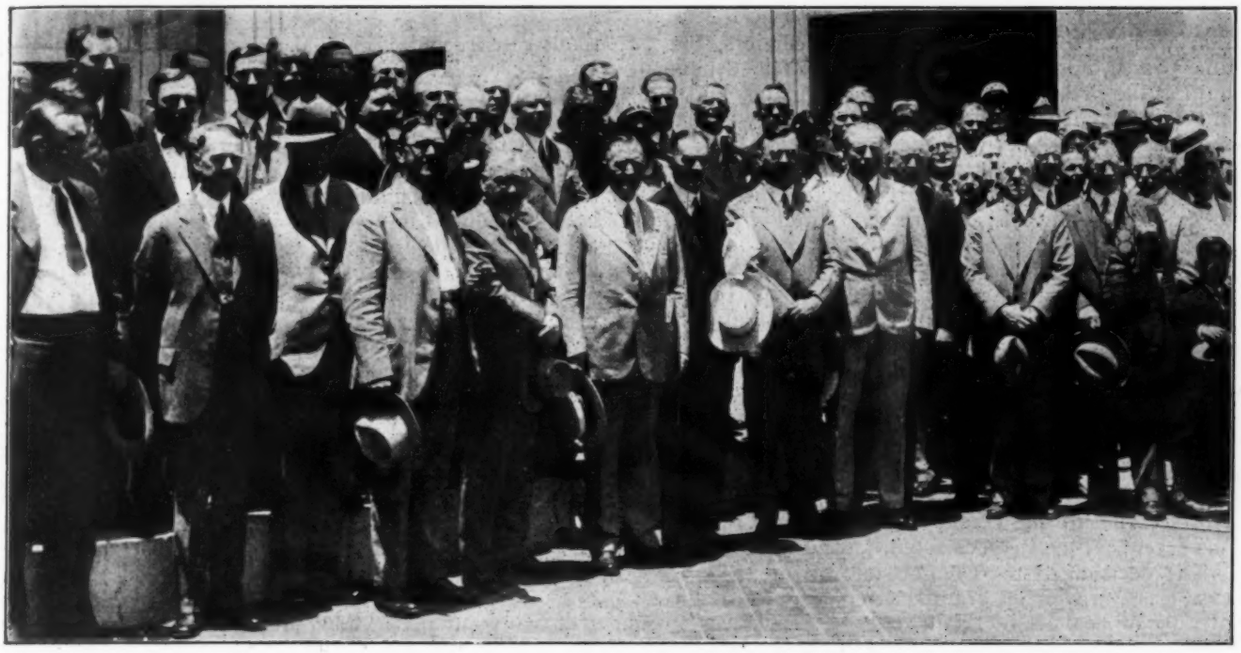
In order for employees to act safely and be efficient they must be thoughtful—they must be happy and contented. The substitution of machinery for labor makes men feel very insecure in their jobs, and one of the very important factors in this safety movement is to surround men with conditions that give a feeling of security and continuity of employment.

There has been during the past few years a decided movement, in railroad industry as well as others, to stabilize steady, all-year-round employment. The degree to which we are able to carry this out in the future will very largely measure the degree of our success in producing efficient operation and the safety of our employees.

Election of Officers

The election of officers for the ensuing year resulted in the choice of the following: chairman, D. G. Phillips (Wabash); first vice-chairman, L. G. Bentley (C. & O.); second vice-chairman, H. A. Rowe (D. L. & W.); members of committee of direction, H. Walsh (N. Y., N. H. & H.); C. E. Hill (N. Y. C.); C. F. Larson (M. P.); D. H. Beatty (Southern)

THE AMERICAN IRON AND STEEL INSTITUTE reports 197,269 gross tons of steel angle bars and 17,195 gross tons of other forms of rail joints manufactured in the United States during 1927, as compared with 230,799 and 19,773 gross tons, respectively, in 1926. The production of steel tie plates in 1927 was 531,382 gross tons and of iron tie plates, 49,671 gross tons, as compared with 558,146 and 50,732 gross tons, respectively in 1926.



A Part of the Group at the Short Line Association Meeting in Mexico City

Short Line Association Meets in Mexico City

Tour through southern republic affords opportunity to study transportation conditions

APPROXIMATELY one hundred officers of member roads of the American Short Line Railroad Association met in Mexico City on May 10 for the sixteenth annual convention of that organization, this being the first time that this association has met outside the United States. Incident to the convention, the members of the association, who with the members of their families formed a party of approximately 180 persons, visited the principal centers of Mexico in two special trains, one of which left Chicago on May 4 over the Chicago & Alton for St. Louis, from which point both trains were operated over the lines of the Missouri Pacific and the National Railways of Mexico, stopping enroute at San Antonio, Monterrey and Queretaro and on the return at San Luis Potosi, Brownsville and Houston. While in Mexico the entire party was taken over the National Railway lines to Toluca and over the lines of the Mexican Railway to Vera Cruz and to Puebla. In all, the party spent 14 days south of St. Louis.

The convention, which was presided over by Bird M. Robinson, president of the association, was welcomed to Mexico by R. Ross, secretary of communications and G. Estrada, secretary of foreign relations, in the cabinet of President Calles of Mexico; by A. De Lima, president of the executive board of the Bank of Mexico and a director of the National Railways of Mexico, by M. Mascarenas, president of the Bank of Mexico and by J. J. Franco, general superintendent of transportation of the National Railways of Mexico. Col. Wm. E. Kay, general counsel of the line Oak, Perry and Gulf, Jacksonville, Fla., and E. E. Jones, general counsel of the Crasse River railroad, Bradford, Pa., responded in behalf of the association.

At the concluding session, the following officers were re-elected for the ensuing year: President, Bird M. Robinson; vice-president and general counsel, Ben B. Cain; vice-president, L. S. Cass; secretary-treasurer, T. F. Whittelsey.

Report of Bird M. Robinson

After reviewing the negotiations leading to the holding of the convention in Mexico City and the opportunities the trip afforded for the members to acquire first-hand information concerning the conditions in that country, Bird M. Robinson, president, reviewed the activities of the organization during the past year, in part, as follows:—

The most important event that has occurred during the last few months, with respect to the interest of the members of this association, and other rail-carriers, is the very definite change of attitude of a large part of the public in many of the states, and many of the most outstanding and influential members of Congress, towards the Interstate Commerce Commission. From the time of the creation of that Commission to the close of the last Congress, it apparently possessed the unlimited confidence of Congress. The evidence of that fact is shown by the uniform increase of powers conferred upon the Commission, year by year, through the numerous acts and amendments made to the Interstate Commerce Act. In the beginning, the Commis-

sion was authorized to regulate the carriers, but as time passed, additional powers were conferred upon it, until at the present time it not only regulates, but to all intents and purposes directs and controls, without the responsibiliy that goes with management.

The carriers have, through long, trying, painful and difficult processes, adjusted the conduct of their business to existing conditions, and notwithstanding the many limitations, hardships and difficulties now imposed, look with great concern upon any proposition to change, to any material degree, governmental participation, through the Commission, in the management and control of their business. They assume, as the result of uniform past experience, that any change means derangement of existing conditions with increase of restrictions and further control.

The fact that there has been a very marked change in the attitude of many of the members of Congress, and that of a large part of the people, especially in certain sections of the country, towards the Commission has recently been demonstrated beyond question.

The decision of the Commission, in the Lake Cargo Coal Case, in which it granted a very material reduction of rates on coal from certain zones in Pennsylvania and Ohio to the lakes, thence to the Northwestern States was and is the basis of severe criticism.

That decision aroused a bitter feeling against the Commission, not only upon a large part of the people in the states of West Virginia, Virginia, Kentucky and Tennessee, including their senators and representatives in Congress, but a like feeling among the people and the senators and members of the Northwestern States, where the larger part of the cargo coal is consumed.

It has been and is vigorously charged that the Commission attempted to usurp a power which will enable it to control economic conditions, by and through the device of higher or lower rates, and thereby destroy prosperous conditions in one section of the country and transfer such conditions to another. It has been admitted that if the Commission has the power to fix rates on such basis, it could at its will destroy business and industry in any particular section.

When President Coolidge sent to the Senate, the nomination of Commissioner John J. Esch, to succeed himself, the representatives of the people who criticised the Commission in respect to the Lake Cargo Case, joined others who do not have confidence in it, and fought vigorously to defeat his confirmation, which they succeeded in doing.

Many of the leaders in that contest stated openly that the integrity and good faith of Commissioner Esch were above question but that he had joined in the decision in the Lake Cargo case and hence was responsible with other concurring commissioners in what they characterize as an usurpation of power; that their act in that case was such as to demand a drastic limitation of its powers, and that the defeat of Mr. Esch was the only way, for the time being, that the members thereof could be warned, in an official way, to desist from further use of the power and authority which they had assumed; hence, the fight made against Mr. Esch was, in fact, a fight against the Commission, as such.

Certificates of Convenience and Necessity

The Commission is now under fire in Congress, and from many people in several sections of the country, because of its action in rejecting a number of applications for certificates of public convenience and necessity, where interested parties desired to have certain railroads constructed. The most notable case of that kind was the application of the Piedmont & Northern for authority to complete its line in North Carolina and South Carolina, the construction of which was begun a number of years ago, but all of the contemplated line had not been completed. That application was recently denied by the Commission, and as a result, bills have been introduced in Congress to repeal paragraph 18 of Section 1 of the Interstate Commerce Act, which gives it authority to issue or deny such certificates.

I have had opportunity to learn, at first hand, the attitude of many senators and members of the House who have determined to prevent, if they can, conferring any further discretionary powers upon the Commission; on the contrary, they have in mind to curtail many of the important powers which it possesses. That strong element in Congress—and it is a strong element—is gradually swinging away from its previous favorable attitude towards further and needed consolidation legislation. Many have decided that they will oppose pending consolidation bills for the reason that too much discretionary power will thereby be conferred on the Commission.

The attack upon the Commission has gone to the extent that many people have proposed that it be abolished, just as the United States Labor Board was. While there is no probability of such unwise action being taken, the attacks made will, beyond doubt, impair its usefulness. If it should break down, for any reason, it would eventually, I believe, result in government ownership. For that reason, and for many others, I think we should sustain the Commission to the extent that we can. Under any and all means, let us exert every effort to keep it free from politics.

Consolidation Problem

The members of this association are vitally interested in having the existing law authorizing the consolidation of all of the railroads into a few well-balanced, strong systems, amended in several important respects. The present systems, with a very few exceptions, are made up of short lines, and conditions in our country are such that the railroad problems cannot, from the public point of view, be settled successfully until the remaining short lines that should not be abandoned are incorporated in the limited number of strong systems that may be created.

The consolidation bills are now pending in Congress; one, the Fess Bill in the Senate, the other, the Parker bill in the House.

The Fess bill, when originally introduced, contained a declaration of policy, in which it was definitely provided that the short and weak roads should be included in any consolidation made, and it contained other provisions that were intended to provide for the inclusion of that class of roads. The Senate, during the last Congress, did not act upon that bill, and Senator Fess re-introduced it in the present Congress, after making certain modifications, of which one was the elimination of the definite declaration of policy. The effect of that change, if that bill should be enacted, would be to make less clear and less certain the status of the short and weak roads, when consolidation of the strong roads is sought. In other words, their status would, under that bill, depend very largely, if not wholly, upon the discretion of the Commission. The Senate Interstate Commerce Committee has conducted extensive hearings on that bill, and has referred it to a small sub-committee of three members, which is giving consideration to the bill, but it has not reported to the full committee; hence, no report has been made to the Senate.

Chairman Parker, of the House Committee on Interstate and Foreign Commerce, reintroduced his consolidation bill, without changing any of its provisions from those of his former bill. It was referred to the committee of which he is chairman, and after extensive hearings, was considered in executive session for some weeks. The majority of the committee approved numerous changes in the bill, whereupon Chairman Parker reintroduced it in the House, in a modified form. It was promptly referred to that committee, and a substantial majority thereof returned the bill to the House, accompanied by a very extended, and in many respects a very strong report, recommending that the bill pass.

We did not have an opportunity to see that revised bill until after it was reported to the House, and we were sorely disappointed with the meager and inadequate provisions for the protection of the short and weak roads.

We recognized that the limited provisions referred to might prove to be something better for the short lines than the existing law, but we know that the failure to protect the public interest in such roads properly and adequately, in any bill authorizing the consolidation of the strong roads, will be contrary to the public interest. and may prove to be fatal to that extent, for the reason that if the strong are permitted to consolidate with the strong, without including the other class, the opportunity to protect that public interest will have passed. This for the reason that our Government does not have the power to compel consolidation, and if and when the strong are permitted to obtain what they want, they will thereafter, beyond doubt, refuse to proceed further.

A minority of that committee filed a dissenting report with respect to that bill, containing a rather extended statement of their objections.

That statement is sound in principle, and is in accord with the contentions of this association.

We confidently hope that the Senate committee will make a very clear and definite declaration of policy in the bill it will probably report to the Senate, and that it will include provisions with respect to the inclusion of the short and weak, that cannot be misunderstood or misinterpreted by any one.

We have no real fear, but that Congress will, when it finally acts upon pending consolidation legislation, make necessary provisions in the law, for the protection of the public interest in, and the equitable rights of the owners of the short and weak roads. Our fear is that there will be no legislation directly affecting the carriers at this session of Congress. That fear is based, first, on the fact that this is a presidential or political year, and that Congress will devote much of its remaining time, as it has up to this time, to political subjects; second, to the change of attitude towards the Commission, heretofore discussed. There is little doubt but that the enactment of either the Fess or Parker consolidation bills will be vigorously resisted by those that oppose conferring upon the Commission any further powers.

Bird M. Robinson

Exemption From Recapture

Senator Pittman reintroduced his bill to exempt certain classes of short lines from the recapture provisions of Section 15a of the Interstate Commerce Act. The Senate Interstate committee reported it with the recommendation that it pass. The Senate has since passed the bill and sent it to the House. It was promptly referred to the House Interstate and Foreign Commerce committee, which has not acted upon it.

Representative Newton reintroduced in the House, his bill which is the same as the Pittman bill, and it was referred to the Interstate and Foreign Commerce committee. That committee gave the interested lines, practically all of which are members of this association, a hearing during two days, and we made a very strong showing in favor of the bill. Unfortunately that committee has been so pressed with work that it has not given consideration to the bill. The action taken consists of the appointment of a sub-committe of five members—all of whom we think are favorable to the bill—and referring of the Pittman bill to the Interstate Commerce Commission for an expression of its views thereon. We have been anxiously awaiting the reply of the Commission, as it is apparent that the sub-committee will not act before it has that reply.

We confidently believe that we will secure the enactment of either the Pittman, Newton or some other bill that will grant the roads the exemption sought, but the prospects for the enactment of such a bill, prior to the adjournment of the present session of Congress, are not very encouraging. Progress during this session will aid materially in attaining success during the session beginning in December.

Other Bills Before Congress

There are large numbers of bills, affecting the carriers, pending in Congress. I feel safe in predicting that none of them will be enacted during the present session. Aside from the consolidation and exemption from recapture bills which I have discussed, probably the most important one pending seeks to repeal Section 15a of the Interstate Commerce Act. We favor amending 15a to the extent of relieving a certain class of roads provided for in the Pittman-Newton bills, and changing the one-year test period provided for therein to a minimum of three or a maximum of five years. I have recommended that change in former reports, and recommended it to the House committee. We are apposed to the repeal of Section 15a, and do not believe that will be done, certainly not now.

Bills were introduced in both houses, intended to force the carriers to use only steel cars, which contain compartments in which mail is handled. The appropriate Senate committee held hearings on the bill, and the showing then made by the carriers, was such that its members promptly agreed that the report thereon should be adverse.

In response to an invitation from the Interstate Commerce Commission I have appointed, experienced and appropriate officials of some of our members, on the committees on Engineering, Accounting and Land Values. These committees have had a number of meetings, and have made progress, but final plans have not been adopted; hence, a final report cannot be made, nor has the work of bringing the value down to date been started. Progress has been made in the Per Diem case, instituted by the commission. The taking of testimony has been completed, and the attorneys who participated, are now engaged in preparing their briefs. In due time, probably not before September, that subject will be brought before the full commission for argument. This Association has aided the commission in every way that it could in its investigation of the difficult problem, and has been very active in presenting testimony, which we believe truly and fairly represents the facts.

Substantial progress has been made in the Mail Pay case now pending before the commission. The Post Office Department is seeking to obtain a reduction ot the amount it is paying the carriers for transporting the mails. On the other hand, the carriers are asking that a very substantial increase be granted for that service. That case has been submitted to the commission, after being fully argued, and we may expect a decision within the next two or three months.

I.C.C. Approves Los Angeles Union Station Plan

WASHINGTON, D. C.

THE Interstate Commerce Commission on May 21 made public a report and order on further hearing in the Los Angeles passenger station case, which has been the subject of much litigation, reaffirming its previous decision that it has not the power to require the railroads entering Los Angeles to construct a union passenger station, costing $10,000,000, as it was requested to do by the city of Los Angeles and the Railroad Commission of California, but issuing a certificate that public convenience and necessity require the construction of the station and the incidental relocation, construction and abandonment of trackage in accordance with an order of the California commission.

The order of the California commission requiring the construction of a union station on what is known as the Plaza site was held invalid by the state courts of California and by the Supreme Court of the United States, which held, however, that the city authorities had taken the proper course in applying to the Interstate Commerce Commission for an order. The city filed a formal complaint asking for an order, which the commission has now dismissed after a series of complicated proceedings, and the state commission issued an amended order effective upon the promulgation of an order and finding of the Interstate Commerce Commission. The Southern Pacific had filed an application for a certificate for an abandonment of trackage incident to a plan for a station on what is known as the Arcade site, but later withdrew it. The federal commission, upon further hearing, adheres to the findings of its original report, which were not put in the form of an order, but has now put into an order a series of findings such as requested by the California commission except that it does not directly order the construction of a station. The commission says in conclusion:

Re-examination of the whole subject again leads us to the conclusion that under existing law we are not empowered to require the construction of a union passenger station of the character sought by the complaint; but that we are authorized to find (1) whether the present or future public convenience and necessity permits of the proposed abandonment of line, (2) whether the proposed extensions of line are reasonably required in the interest of public convenience and necessity, and whether the expenses involved therein will impair the ability of defendants to perform their duties to the public, and (3) whether such joint use of existing terminal facilities by other than the owning carriers, as would be necessary if a new union passenger station were established in the Plaza area, is in the public interest and practicable, without substantially impairing the ability of the owning carrier to handle its own business. These are the conclusions which we reached upon the original presentation.

All issues of fact having been considered and concluded by our original report and this report on further hearing, nothing remains for us but to deny the application of the city of Los Angeles and the intervener, the Railroad Commission of the State of California, for a final order herein requiring the construction of a station as found in the public interest; but in lieu thereof issue an appropriate certificate of public convenience and necessity conformable to the findings herein; and to dismiss the application in Finance Docket No. 3556. An appropriate certificate and order will be entered.

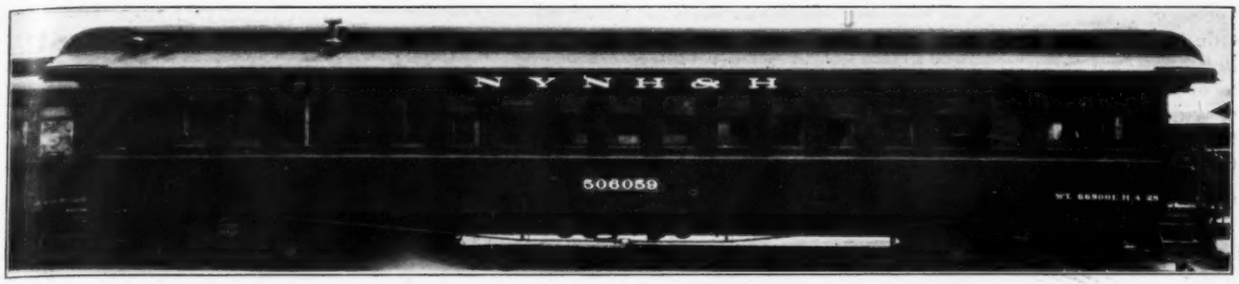
Commissioner Eastman, in a concurring opinion, in which Commissioners Lewis and McManamy joined, said the commission probably has the power to enter the desired order and that the least possible delay in determining legal questions and arriving at an end of litigation would result if it, as well as the state commission, should enter an order. Commissioner Brainerd dissented, objecting to the issuance of a certificate upon complaint by the city of Los Angeles and others, not upon the application of any carrier and in fact over the objection and protest of all the defendant carriers.

Paulista to Use a Portable Substation

DESIGNS have been completed and work is in progress on a portable railway substation which is being constructed by the Westinghouse Electric & Manufacturing Company for the Paulista Railroad Company of South America. When completed this station will be used on the 150-mile electrified line between Jundiahy and Rancao in the heart of the coffee district of Brazil.

The station will include two cars with a total weight of approximately 150 tons. Its capacity will be 2,000 kilowatts, equal to about 2,700 horsepower. It will draw power at 88,000 volts from a transmission line and will supply 3,000 volts direct current to the trolley wire. Except when starting up, its generators will run without attendance. It will be the largest portable railroad substation and the first to supply power at 3,000 volts.

THE PACIFIC SOUTHWEST EXPOSITION will open at Long Beach, Cal., on July 27 and continue through August, in commemoration of the coming of the Spanish padres to establish Indian missions.



Each Wrecking Crew on the New Haven System Will Be Provided with One of These Dining Cars

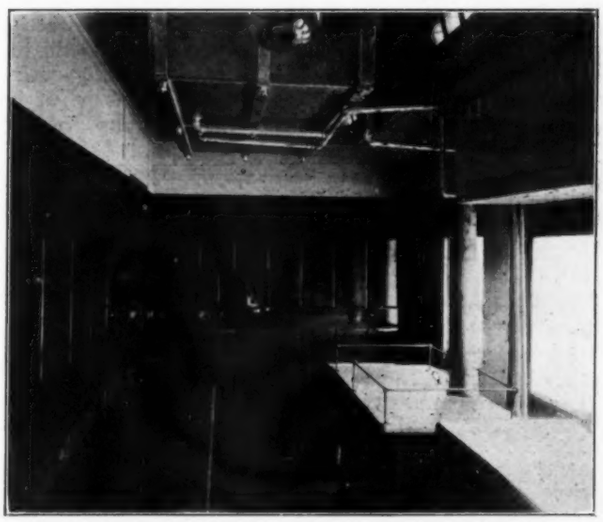
New Haven Builds Dining Car for Wrecking Crew

Provision made for serving thirty-two men and sleeping quarters for a regular crew of sixteen

REALIZING the value of adequate facilities for properly caring for the wrecking train crews, the New York, New Haven & Hartford has recently placed in service with the New York division wrecking equipment, a dining car designed to provide adequate sleeping and eating facilities for the wrecking crew. A car of similar design will be furnished to each wrecking crew on the New Haven system. A 60-ft. wood passenger coach was converted to a dining car. The car was taken to the East Hartford, Conn., shops where it received general repairs and the interior was rebuilt according to the floor plan shown in the illustration.

The Kitchen

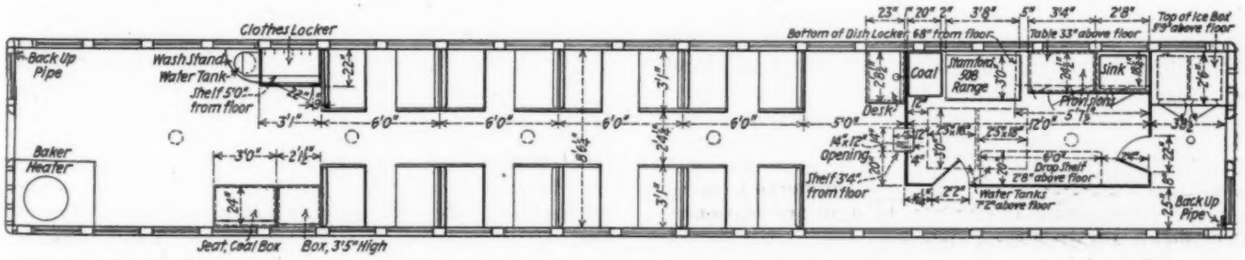
The kitchen, which is located at the rear end of the car, is 12 ft. long by 6 ft. 4 in. wide and contains in it, without overcrowding, all necessary kitchen equipment, as well as ample storage space. Facing the windows is a Stamford eight-griddle hard coal range, around the top of which is mounted a guard rail to prevent cooking utensils from slipping off the stove while the car is in motion. Next to the stove is the serving table and sink. The sheet-metal covered serving table is 3 ft. 4 in. long by 2 ft. ½ in. wide and slopes toward the sink, which is 2 ft 8 in. long by 2 ft. ½ in. wide. The water for the sink is piped from two overhead water-storage tanks, each 3 ft. by 2 ft. 5 in. by 18 in. Provision and dish cupboards are located beneath and above the serving dresser and sink. On the opposite side of the kitchen is a 6-ft. by 20-in. general utility shelf. Two drawers for holding cutlery are located beneath this shelf and under these are two vegetable bins in which are kept 1½ bushels each of potatoes and onions. A cupboard has been built above the shelf in which are kept the dishes. The kitchen may be entered through two doors, one leading in from the upper end of the 2-ft. 1-in. passage way



The Kitchen, Looking Toward the Dining Room Serving Shelf

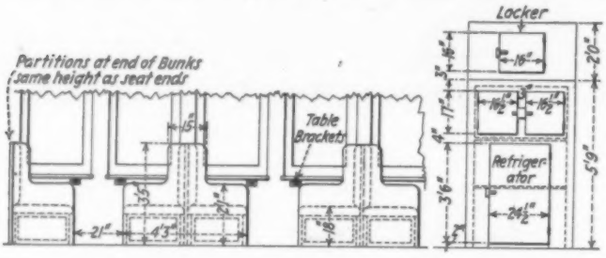
which extends the length of the kitchen and the other, from the refrigerator to the back end of the kitchen. Service between the kitchen and dining room is effected by an opening in the partition with the serving shelf extending both into the kitchen and the dining room.

The refrigerator is 5 ft. 9 in. high by 3 ft. 8½ in.



Floor Plan of the New Haven Dining Car for Wreck Trains

wide and is divided into three compartments. Each of the upper two compartments holds 100 lb. of ice. The lower main compartment is entered through a door 24½ in. wide by 3 ft. 6 in. high. It is of ample size to hold various kinds of can goods in case lots. A provision



The Seat Arrangement and the Refrigerator

locker, 2 ft. high by 3 ft. 8½ in. deep, is located directly above the refrigerator.

The Dining Room

The dining room is 29 ft. long by 8 ft. 6¼ in. wide and contains eight pairs of facing seats with 6 ft. centers and 3-ft. 1-in. wide Pullman chair-car tables fit into the brackets located in the side walls between each pair of seats. When the eight tables are all in place, 32 men can be served at one sitting. These tables, when not in use, are placed on end in the box directly opposite the clothes locker located in the front end of the car. Each seat is provided with two spring cushions covered with black imitation leather. When it is necessary for the men to sleep, the cushions are ar-

The Dining Room, Showing Two of the Seats Made Up as a Bed

ranged to form a bed, much in the same manner as that followed in making up a lower Pullman berth. The aisle ends of the cushions are supported by an angle iron which extends between the seats, as shown in one of the illustrations. This bar, when not in use, can be swung on a hinge and be made to fit over the edge of the seat. This arrangement of seat cushions provides sleeping quarters for 16 men. The members of the wrecking crew store their clothing in chests under the seats, which are entered by lifting the seat cushions.

The car is heated by a Baker heater located near the door at the front end. The coal box is flush against the box in which are kept the dining tables. These two boxes serve as seats for the men. The two rear end markers, the fussee rack and the torpedo box, are located above these two boxes. A rack for holding the flags is located alongside of the table box and attached to the back of the last seat. This equipment is kept in the car because the train crew is housed in this car, thus eliminating the necessity of including a caboose in the wrecking equipment. The two pairs of facing seats, one pair on each side of the car, at the front end of the dining room, are set aside for the train crew. A wash stand and clothes locker is located directly across from the two boxes in which the coal and tables are kept. The office of the wrecking master is located in the front end of the car. Five acetylene lamps furnish light to the car. The acetylene is carried in four cylinders located underneath the car.

Electric Traction for Boston, Revere Beach & Lynn

THE application of electric operation to a heavy-traffic, rapid-transit railroad is exemplified by the complete electrification, now in progress, of the Boston, Revere Beach & Lynn. This railroad, which has a three-foot gage, connects East Boston and Lynn, Mass.—a distance of nine miles—with a branch reaching the town of Winthrop.

The line is double-track throughout. During rush periods six-car trains are operated on 10-minute schedules on each division. The company also operates four ferryboats between East Boston and Rowe's Wharf on Atlantic Avenue, Boston, connecting with all trains. Electric equipment for the change-over will be furnished by the General Electric Company. Sixty two-motor traction equipments will be installed on the passenger cars, and four-motor equipments will drive the work cars. Three substations will supply the power necessary for the operation of the cars, delivering it through the medium of an overhead distribution system. Each of the passenger car equipments will consist of two 60-horsepower, 600-volt motors with light-weight multiple control. Each work car will be equipped with four motors of the same type but with platform type control. Electric headlights will be used on all cars. Air brake equipment will be of the double-end, electro-pneumatic type. The electrical equipment will be installed on the present coaches and the work will be done in the railroad's shops. Meanwhile, the use of electricity will be extended to the waiting rooms where electric turnstiles will be placed in service without waiting for electric train operation.

Two of the electric substations will be fully automatic, one containing a 1,000-kilowatt synchronous converter and the other, two synchronous converters of the same size. The third substation will be of the portable type, carrying a 1,000-kilowatt, manually-controlled converter.

Power will be purchased from local power companies and distribution will be made over a 600-volt catenary line. Simple, direct suspension will be used in the yards and sidings.

Electrification will replace 26 narrow-gage steam locomotives now in use. Under the direction of the engineering and management organization of Hemple and Wells, numerous other improvements will be made, including the remodeling of the stations and the modernization of all equipment.

Group of Employee Magazine Editors at University of Missouri on May 10

Employee Publication Editors Meet in Annual Convention

American Railway Magazine Association stresses public relations value of its work

MORE than 80 members of the American Railway Magazine Editors' Association, representing 46 employee magazines on 200,000 miles of railway line, met at Columbia, Mo., on May 10 and 11 for the fourth annual convention of the American Railway Magazines Editors' Association, held this year in conjunction with the annual Journalism week of the University of Missouri School of Journalism. In addition to participating in their own association meeting, a number of the magazine editors presented papers before the meeting of the Missouri Press Association.

Officers of the association who were elected for the ensuing year are: President, Holcombe Parkes, editor Norfolk & Western Magazine; first vice-president, W. L. Huggins, Jr., editor, Frisco Employees' Magazine; second vice-president, W. M. Wentz, editor, Pennsylvania News, Eastern Region; secretary-treasurer Miss Page Nelson Price, Norfolk & Western Magazine. The members of the executive committee for 1927-1928 are: W. E. Babb, editor, Rock Island Magazine; F. E. Heibel, editor, Nickel Plate Service News; W. C. Crutchfield, editor and business manager, Nashville, Chattanooga & St. Louis News Item; Benjamin Bell, Jr., editor, Chesapeake & Ohio and Hocking Valley Employees' Magazine; H. H. Kingston, Jr., editor, Buffalo, Rochester & Pittsburgh Railway Life.

During the business session of the association on May 10 committee papers were presented on the subjects of "The Purpose of the Railway Employees' Publication," "Recent Developments in the Railway Employees' Publication Field" and "The Comparative Advantages of the Newspaper and Magazine Style of Publication."

The replies to a questionnaire sent to all member magazines of the association were summarized and presented in a paper entitled "The Public Relations Value of the Railway Employees' Publication".

Of the 32 magazines with a combined circulation of about 1,000,000 copies per issue, 100,000 copies per issue, according to replies to the questionnaire, are distributed to those outside of the railway field. The answers show that the railroads involved feel that the material carried in the employee magazines and newspapers, and reaching the public through public distribution, has its effect in attracting the sympathetic consideration of the public readers, showing them how the men and women of the railroad are making co-ordinated effort to serve them, and tends to convince them of the spirit of fair dealing and good will in railroad ranks. In practically every case it was found that a favorable reaction was gained from the distribution of copies to outsiders as evidenced by complimentary letters and requests for missing copies. Representatives of several magazines suggested that the use of material concerning the activities of the territory served by the particular railroad would further enhance the public relations value of the employee publications.

In reply to the question, "What other means are employed by your railroad management to bring about better public relations, and what reaction do you get from these additional public relations activities?" it was shown that the railroads provide newspapers quickly with the facts of the railroad business, including accidents; issue pamphlets; co-operate with communities in their work to obtain tourists and settlers; distribute news items and photographs to newspapers in their re-

spective territories; provide railroad speakers; prepare moving pictures; form public relations committees in the principal cities of their lines; place informative advertising in on-line newspapers; prepare exhibits for fairs and expositions; organize employees clubs, and maintain musical organizations for appearance at local community gatherings. The replies showed that the results of such public relations work are reflected not only in freight and passenger receipts, but at the ballot box and in the verdicts of juries, constituting a marked improvement in the sentiment of the public toward transportation.

Journalism week as well as the magazine editors' meeting was concluded on May 11 by a banquet with a distinct railway atmosphere which was arranged by the magazine association.

The speakers at the banquet were W. E. Babb, editor of the Rock Island Magazine, retiring president of the association, and Samuel O. Dunn, editor of *Railway Age*, with Walter Williams, dean of the School of Journalism, as toastmaster.

Mr. Babb pointed out that the American Railway Magazine Editors' Association, represents nearly 200,000 miles of the railways of the United States. The editorial staffs of the publications are directing their efforts toward the objective of improving the railway service to the shipping and traveling public through a personnel of increasing efficiency. Often these publications are the only means of information which the employees have regarding the larger aspects of their railroads and of the territories served. They are also an aid of unquestioned value in broadening the view of both management and men, while reflecting a working policy in the railway industry. Likewise, these magazines enliven the pride of the employee in his railroad, on which he performs a most useful public service.

Mr. Dunn, with the subject "The Press and the Railroads", declared that newspaper editors can do more good or harm by what they publish regarding the railroads than by what they publish regarding any other single industry. He explained how the newspapers may publish articles criticising or praising the management of the manufacturing industry, or some branch of it, and these articles may make the public feel favorable or unfavorable toward that industry. But the articles will probably do the industry comparatively little good or harm because it is subject to very little government regulation.

"On the other hand," Mr. Dunn continued, "if the newspapers publish articles that create either an unfavorable or favorable public sentiment regarding railways it is a matter of only a short time until this sentiment affects regulation of railways, and until regulation affects the rates, the net earnings, the operation and the service of the railways.

"The return of the railways to private operation, in 1920 under the Transportation Act was due to an almost unanimous public sentiment against government operation which was created mainly by the press," he said.

"Both railway officers and the press had their share of responsibility for the kind of regulation that prevailed before the war and the effect it produced," Mr. Dunn declared. "Abuses in railway management invited attacks upon the railways and for years they did not adopt intelligent means of giving the public information regarding their affairs. The press often criticized the railways unfairly, although in many instances this was due to lack of information that the railways should have supplied.

"We have arrived at a point, as we have on some previous occasions, when public sentiment as expressed in regulation will determine whether the railways will continue to go forward or will begin to go backward. Railway earnings and expenses are rapidly becoming subject to the same influences that prevailed before the war. The good and adequate service rendered during the past five years has been of inestimable value to the public; and the public cannot afford to have railroad progress arrested as it was in the years immediately preceding our entrance into the war, because the consequences would be the same as then.

"The press of the United States will largely determine the future of the railways. It will largely determine whether we shall continue to have private ownership and management or shall adopt government ownership. It will largely determine whether, if we continue to avoid government ownership, the railways will so prosper under private ownership that they will be able to continue to improve their properties and service and to operate economically in proportion to their wages and other costs."

On behalf of the association Mr. Babb presented to Dean Williams a gavel made from copies of the 46 publications represented in the organization.

Aiding the Local Crews

THE Wabash has developed an interesting and inexpensive device for aiding the crews of local freight trains in unloading freight at stations. When several way-cars are handled on a local freight train, the crews draft a simple chart on a piece of clip paper, showing the number of pieces of l. c. l. freight to be unloaded at each station. An example showing the type of chart used is given below:

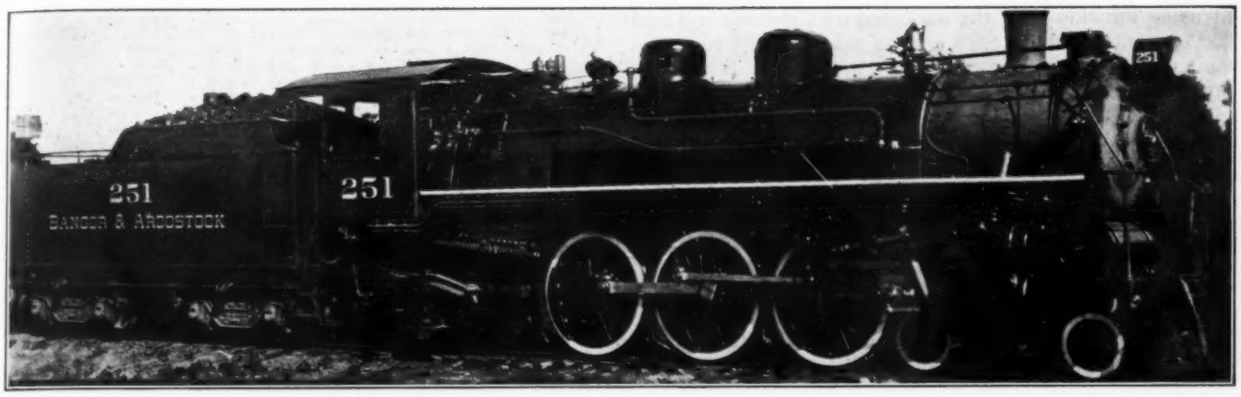
Car. No.	Meredosia	Perry Spgs.	Versailles	Hersman	Mt. Sterling	From
W-66327	5	1	6	3	2	Hannibal
W-65461	3		27	18	5	Springfield
W-78582	17	9	23	1	23	Decatur
W-71911	4	5	5	9	3	Jacksonville
W-76833	1	11	7	12	8	Chicago
W-75806	8	7	8	11	5	Chicago

The brakeman whose duty it is to hunt freight in the cars, runs through the bills before the arrival of the train at the first station and lists the number of pieces to be unloaded from each car at each station, as shown above.

A roughly ruled chart of this kind does much to prevent freight being carried by, eliminates many "overs" and "shorts" and avoids confusion, especially when the way-cars do not happen to be loaded in station order. It also reduces delays at stations. While the rules require agents to check the freight that is unloaded, this chart also serves as an additional check to prevent errors. Local conductors on the Wabash find it useful for future reference and many of them keep a file of the daily charts for several days back on a spindle in the caboose.

Some crews use station numbers instead of the station names:. An additional column may also be added to show cars set out for any reason and, when required for other reports, a summary of the l. c. l. tonnage may be approximated.

IN THE LARGE SHOPS of the American Car & Foundry Company at Berwick, Pa., the total compensation paid to injured employees on account of accidents in the years 1926-27, was $11,590, which was at the rate of $757.50 per one million man hours, the total number of hours worked having been 15,299,927. This rate ($757.50) was 72 per cent below the cost of injuries in 1923-24.



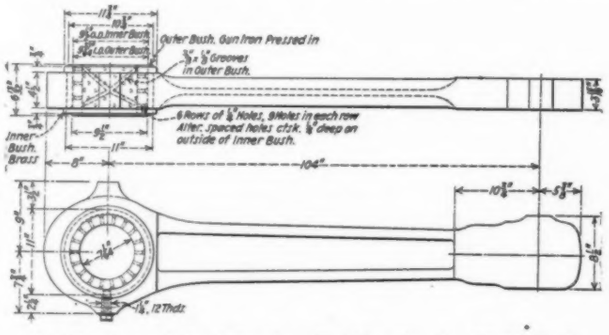
One of the Bangor & Aroostook 4-6-2 Type Locomotives

Bangor & Aroostook Purchases 4-6-2 Locomotives

Replace saturated steam engines—Novel rod connections eliminate knuckle pins

FIVE passenger locomotives of the 4-6-2 type were recently delivered to the Bangor & Aroostook by the American Locomotive Company. These locomotives average 237 miles each day, running between Bangor, Maine, and Van Buren. The maximum grades and curves on this line are 1.2 per cent and 8 deg., respectively. The locomotives replace five 4-6-0 type saturated steam locomotives, which are now used in lighter service.

The total weight of the locomotive loaded is 237,000 lb., of which 141,000 lb. is on the drivers. The total



Application of the Floating Bushing in the Main Rod

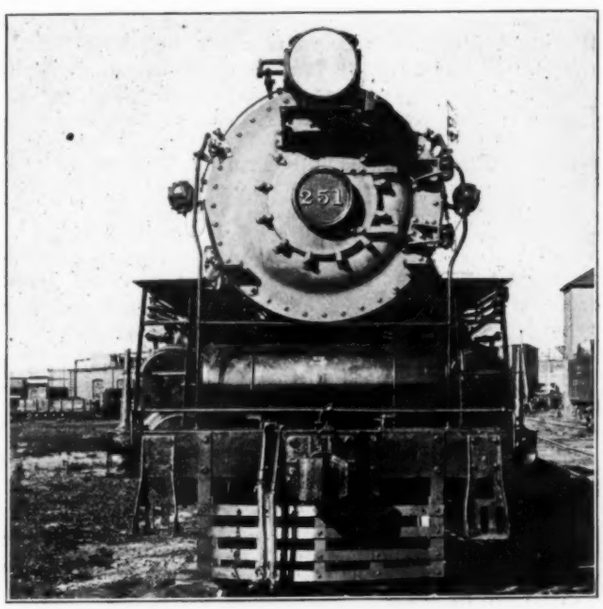
weight, including the tender, is 398,000 lb. Using 210 lb. boiler pressure, with 21-in. by 28-in. cylinders and 69-in. driving wheels, these locomotives develop a tractive force of 32,000 lb. The steam distribution is controlled by piston valves 12-in. in diameter, actuated by the Baker type of valve gear, producing a travel of 7½ in. An Alco power reverse gear is employed.

The Boiler

The boiler is of the extended wagon top design. The first course is straight and has an inside diameter of 67 in., while the second course is tapered, and the third course, on which a one-piece pressed-steel dome is located, is straight and has an inside diameter of 73 in. The firebox dimensions, which are the largest on the road, are 102 in. by 73¼ in., giving a grate area of 52 sq. ft. The firebox is equipped with two Thermic syphons and two arch tubes. A Type A superheater with 30 units is used. A total of 550 flexible staybolts are used in the firebox. Each engine is equipped with a soot blower, a pyrometer and a back pressure gage. The Chambers front end throttle is used, and Flextite steam pipe casings are used at the smoke box points.

Side Rod Connections

In an effort to eliminate knuckle pins as a source of trouble and to reduce maintenance, a new scheme of rod connections has been applied to these engines. Instead

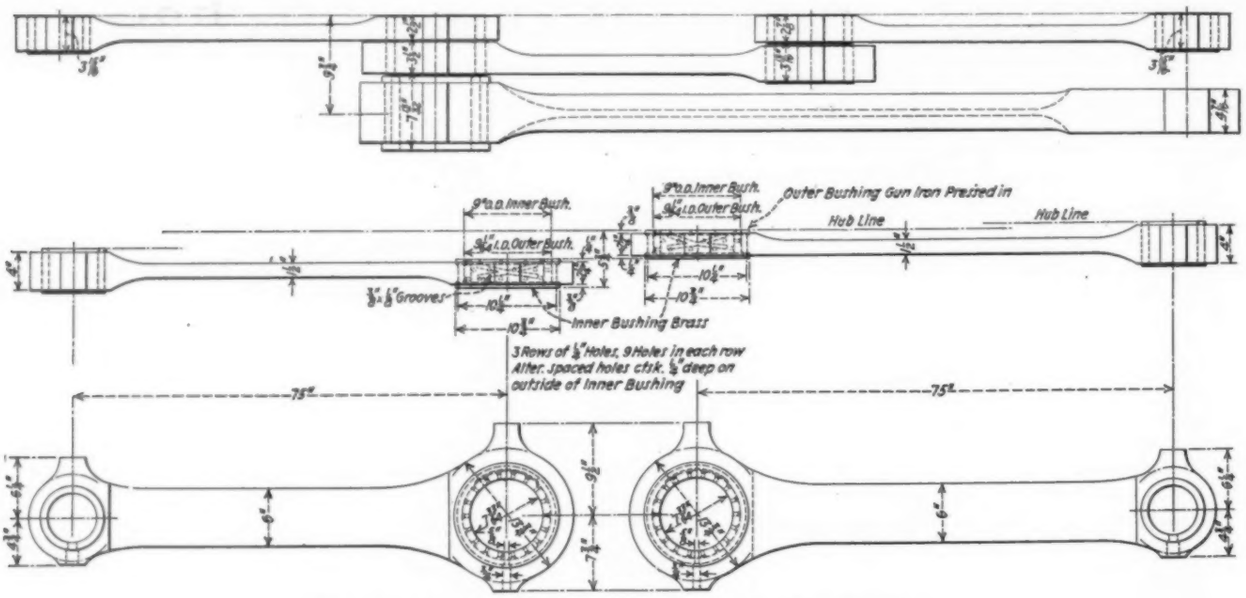


The Main Reservoir is Placed Under the Smoke Box

of using knuckle pins, the back end of the main rod and the two intermediate ends of the side rods fit over the main pin. These side rods are equipped with floating bushings on the main pin, each rod end having its own bushing. At the top of the rod drawing the rods are shown connected up in this fashion for an eight-coupled locomotive. An advantage of this method of rod connection is that if one side rod fails, the main rod is able to drive two pairs of drivers from the main pin, instead of one pair. Under the conventional type of rod connection, a knuckle pin or rod failure means the loss of the service of two pairs of drivers.

Floating bushings with six rows of ¼-in. holes, nine holes in each row, alternately spaced, are used on the back end of the main rod. These bushings float in a gun iron outer bushings pressed in the rod. Grooves ⅜ in. by ⅛ in. are cut in the outer bushing for distribution of the grease to the floating bushing. The holes in the

Service	Passenger
Cylinders, diameter and stroke	21 in. by 28 in.
Valve gear, type	Baker
Valves, piston type, size	12 in.
Maximum travel	7½ in.
Outside lap	1¼ in.
Exhaust clearance	⅛ in.
Lead in full gear	¼ in.
Cut-off in full gear, per cent	85
Weights in working order:	
On drivers	141,000 lb.
On front truck	49,500 lb.
On trailing truck	46,500 lb.
Engine	237,000 lb.
Tender	161,000 lb.
Total engine and tender	398,000 lb.
Wheel bases:	
Driving	12 ft. 6 in.
Rigid	12 ft. 6 in.
Total engine	33 ft. 4 in.
Total engine and tender	64 ft. 5½ in.
Wheels, diameter outside tires:	
Driving	69 in.
Front truck	31 in.
Trailing truck	43 in.
Journals, diameter and length:	
Driving, main	10 in. by 12 in.
Driving, others	9 in. by 12 in.
Front truck	6½ in. by 12 in.



Method of Connecting Side Rods to Eliminate Knuckle Pins

floating bushings are countersunk ¼ in. deep for the purpose of more readily feeding the grease to the pins. This type of rod connection and floating bushing has caused no trouble during 30,000 miles of service.

The Engine and Trailer Trucks

The locomotives are equipped with the Blunt engine and trailer trucks, supplied with Hennessy lubricators. Briefly, the principal features in the design of these trucks are the elimination of bolt fastening and equalizers, elimination of wearing surfaces on the pedestals, two part hub liners and a centering device which permits a swing of 2¾ in. each side of the center. The wheel base of 86 in. permits the use of long, flexible, straight leave easy riding springs. Hinged lids on the trailer trucks are provided at the the ends of the journal box castings which permit the packing and lubricating of the cellars without necessitating their removal.

The tender is carried on a Commonwealth one-piece cast steel tender frame. The principal dimensions, weights and proportions are given in the table.

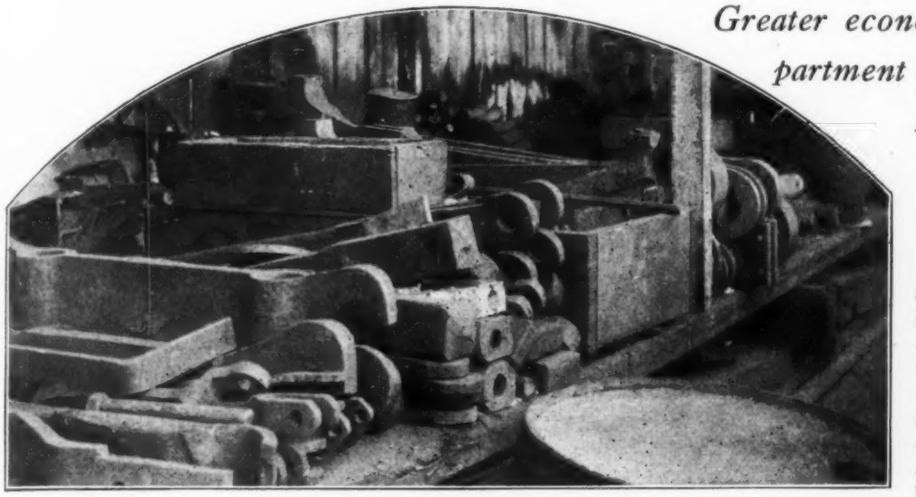
Table of Dimensions, Weights and Proportions

Railroad	Bangor & Aroostook
Type of locomotive	4-6-2
Trailing truck	8 in by 14 in.
Boiler:	
Type	Extended wagon top
Steam pressure	210 lbs.
Fuel, kind	Bituminous
Diameter, first ring, inside	67 in.
Firebox, length and width	102 in. by 73¼ in.
Height, mud ring to crown sheet, front	74 in.
Height, mud ring to crown sheet, back	47 in.
Arch tubes, number	2
Tubes, number and diameter	166—2 in.
Flues, number and diameter	30—5¾ in.
Length over tube sheets	19 ft.
Tube spacing	¾ in.
Grate area	52 sq. ft.
Heating surface:	
Firebox and comb. chamber	168 sq. ft.
Arch tubes and syphons	62 sq. ft.
Tubes	1,643 sq. ft.
Flues	798 sq. ft.
Total evaporative	2,671 sq. ft.
Superheating	693 sq. ft.
Comb. evaporative and superheating	3,364 sq. ft.
Tender:	
Style	Acme tank
Water capacity	8,500 gals.
Fuel capacity	12 tons
General data estimated:	
Rated tractive force, 85 per cent	32,000 lb.
Weight proportions:	
Weight on drivers ÷ total weight engine, per cent	59.5
Weight on drivers ÷ tractive force	4.4
Total weight engine ÷ comb. heat surface	70.5
Boiler proportions:	
Tractive force ÷ comb. heat. surface	9.51
Tractive force × dia. drivers ÷ comb. heat. surface	656
Firebox heat. surface ÷ grate area	3.23
Firebox heat. surface, per cent of evap. heat surface	5.1
Superheat. surface, per cent of evap. heat. surface	25.9
Comb. heat. surface ÷ grate area	64.7

The Consumer's Interest in the Railway Supply Problem

Greater economies in store as department viewpoints broaden—Lessons in chain store methods

By F. M. A'Hearn*



Forgings That Would Be Used Quicker if Easier to Reach

IN 1926, the carriers spent $519,500,000 for locomotive maintenance; $518,583,000 for freight car maintenance and $103,000,000 for passenger car maintenance. In round numbers $200,000,000, or over one-third of the $500,000,000 spent on freight car work, was for material. While exact figures are not available it is not improbable that not less than another $200,000,000 was spent for locomotive materials during the same period. From this we see that some $400,000,000 worth of materials must be provided annually for the mechanical department alone.

During comparatively recent years a decided change has taken place in the method of providing these materials. The old order of individual departments providing and caring for their own supplies has given way to highly organized store departments where accurate methods of ordering, stock, and distributing materials prevail. All of the efforts of stores departments, however, still leave two points of contention between the departments; slow moving materials with high inventories on the one hand, and complaints from equipment departments of work delayed by shortage of material on the other. Either condition is reflected ultimately in decreased net to the carrier. The loss must be considered by the two departments as an evil to be overcome by united effort by both.

It has been repeatedly brought out that the first essential in safe-guarding the treasury in the outlay for materials is a "get together" spirit on the part of the two departments. The single acts of the mechanical department, matching instances of shortages and delays against the slow moving stock lists issued by the stores department, accomplish little. They only go to the effect and not the cause. Does the consumer always realize that carriers estimate a cost from 15 per cent to 25 per cent annually for carrying material, and that the outlay for carrying only a comparatively small amount of slow moving stock means thousands of dollars in the aggregate? Conversely, does the stores department, in an effort to hold down requisitions, consider the daily earning power of a delayed locomotive or car? The values represented in either case are important and should not be sacrificed to improve the "showing" for either of the interested parties.

Too Many Items

The catalogue of Montgomery, Ward & Co., lists some 33,000 items of stock. When it is considered that the stock of a railroad has been known to comprise 58,000 items, the possibilities of co-ordinated effort in securing materials are, to say the least, interesting. It means a more rapid turnover to the purchases and stores men; a more liberal supply of essentials to the consumer. A few of the items among those that have been studied at various points with success are the following:

Files—Number of sizes carried reduced 25 per cent.

In a Disorderly Paint Shop the Tables, Barrels and Pails Hide Uncertain Quantities and Kinds of Supplies

* *Assistant general foreman, Bessemer & Lake Erie, Greenville, Pa., and president International Railway General Foremen's Association.*

Firebox and flange steel—Reduced from 72 sizes to 23 sizes. When a program of firebox renewals is contemplated, suitable sheets are purchased, with delivery to suit the progress of the work.

Tank grade steel sizes reduced over 50 per cent.

Rough turned driving axles—Thirty-nine finished sizes in stock. Originally there were 14 or 15 rough sizes. They were first cut to four sizes with the understanding that, when good reason could be shown, additional sizes would be added. After a three-year interval the list shows six sizes. The list is checked by the machine foreman who is required to ask for additional sizes when excess material is wasted in finishing.

Cylinder packing rings—Number of sizes reduced

Shop Material Which Would Be More Useful in the Storehouse Than Under a Coal Chute

from 181 to 82 on a road operating approximately 2,000 locomotives.

Injectors—A number of saturated locomotives were converted to superheaters. It was found that the use of a smaller injector was advantageous. The larger injectors were placed on a class of power used intermittently and renewal stocks were cut accordingly. The smaller size was a type in general use, and the spare part list showed a rapid turnover. No new injectors were required to make the change.

Tool Steels

Tool steels—High speed steel is expensive. Rectangular bar sizes other than those frequently used were discontinued. This move was favored by a more general use of tool holders fitted with small bits instead of using several pounds of high speed steel to provide a shank for each individual cutter.

Twist drills—Many automobiles and contract shops use taper shank drills exclusively in all but the smaller sizes. In railroad shops all commonly used sizes are purchased in taper shank type for use in portable machines. At the same time many shops carry duplicates in all sizes up to two inches or larger in straight shank types for use in drill presses. It is easy to see that a stock of drills varying by 1/32-in. below 1½-in. and by 1/16-in. above that size will run into thousands of dollars on a large system. Certain shops, seeing no final advantage in duplication, are abandoning straight shanks in all but the smaller sizes and using taper shanks only.

A list of rough turned piston rods was cut in half in one case without any inconvenience. Larger items, too, require careful attention—for example, driving wheel centers. The substitution of cast steel for cast iron has reduced wheel center breakage to a minimum, yet it is not uncommon to see large stocks of wheel centers at repair shops. That the stocks are unnecessary is witnessed by the surface condition of the castings, showing months or years of repose in the stock pile. The illustration on page 1696 of the June 4, 1927 issue of the *Railway Age* is typical of many locomotive repair stocks.

Another example might be cited where a rack supported 50 or more guide yoke extensions of similar proportions. While the rack was well built and the castings neatly arranged, the reason for the large stock of castings and the rack was not entirely clear. The condition of the castings indicated many months exposure to the weather. At still another shop the supply of smoke box front ends racked in rows on the stock platform indicated either an abnormal wear and tear on front ends or an excess stock of this item.

The advance made in recent years in the art of fusion welding has greatly reduced the renewal of locomotive cylinders. The old time belief that a large stock of cylinders against emergency needs was a necessity has, to a large measure, been overcome by fusion welding, together with the protection afforded by the steel bumper beams now generally used. Cylinder stocks, because of their comparatively slow turnover and high unit price, afford an excellent opportunity for saving by means of stock reduction.

Example in Dollars and Cents

As an example of reduction of stock in dollars and cents, a single case, which is typical, will be cited. A list of slow moving items was submitted to a committee of three, representatives of the engineering, shop, and stores departments. The stock list comprised chiefly injector parts, lubricator parts, safety valves, cab fittings, and similar items. The various kinds of stock listed covered some 260 different items and the number of the individual items ranged from a single item of one kind up to 25. The value of the items shown was $3,762.99. The list was revised, some items found obsolete, some discontinued as stock to be purchased only on order, while in other cases the quantities were reduced, and in still others the amounts carried were not considered excessive, but were slow moving only because the particular class of equipment using the item was not at the time undergoing classified repairs. The revised list represented a value of $2,275.89, or a reduction of $1,487.10, approximately 39 per cent. At a carrying cost of 20 per cent, the saving of approximately $300 annually made a gratifying return for a few hours' work on the part of the committee. Lists of this kind are prepared from time to time on the Bessemer and Lake Erie and brought to the attention of those interested. New items are added only upon the written request of the consumer who indicates the amounts to be carried. If there should be no issues after a reasonable period, an explanation is required of the department requesting that the stock be carried.

Interest of Users Vital

No employee of the railroad is in a better position to observe causes for renewals of materials than the mechanical supervisor. Suggestions in matters of improved design or of substitution for longer wearing materials may be expected from him. The details of work properly or improperly performed are within his juris-

diction. When a few locomotives of a certain type make less than half the mileage of similar locomotives, and the cause is traced to unusual tire wear or similar causes, he may remove the cause by correcting shop methods, and incidentally conserve materials while extending the period between classified repairs.

A Common Cause

One common cause for slow moving stocks is found in the purchase of replacement parts for special appliances. It is not at all difficult to select from a catalogue a complete list of renewals for any auxiliary device used, but it will be found more satisfactory to secure the advice of a representative of the company furnishing the device concerning the parts most liable to wear or breakage. It is unusual for a supply company to convey the impression that its device is subject to frequent breakdowns. For this reason the stock list suggested by the supply company will, as a rule, contain only necessary and active materials.

Save by Planning

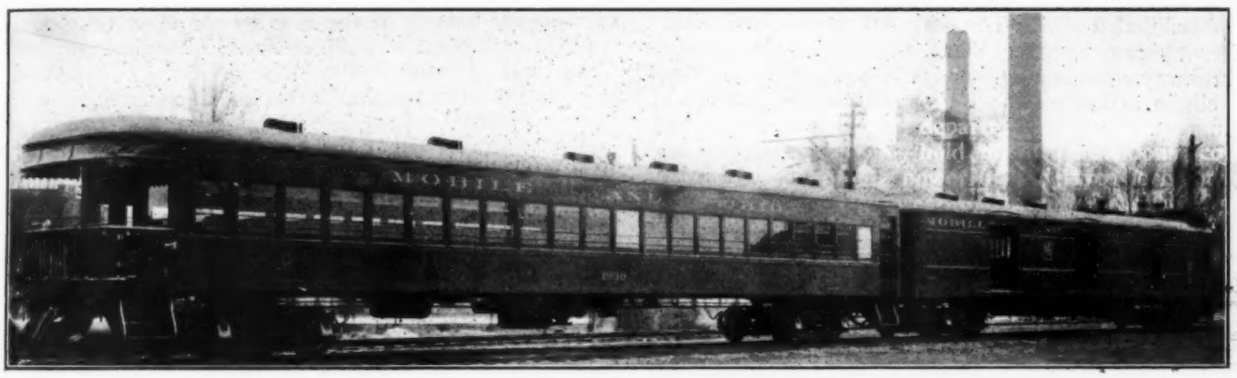
When renewals requiring unusual amounts of materials are contemplated, much dissatisfaction will be avoided if advance notice is given of the probable date that material will be required, or if notice is given, to show approximately the amounts required on certain advance dates. If there is any reason to believe that the demands of the consumer cannot be fulfilled on those dates, there should be no delay in acquainting him with conditions. If, on the other hand, it is seen that materials may accumulate because of changed conditions in working schedules, or for other causes, the supply department is entitled to the information in order to adjust deliveries accordingly.

Harmony the Key to Economy

There is no item used in railroad operation too small to offer possibilities for economy, and this without necessitating any undue inconvenience. The Woolworth stores furnishes ample proof of the margin of profit possible in 5 and 10 cent articles. The interest of the purchasing public in getting the greatest value from the expenditure of the nickel or dime is evidenced in the success of this business. The same interest in handling railroad materials means millions annually to the railroads. Harmonious relations and close contact between stores, and mechanical departments is one of the best methods of bringing about satisfactory conditions to both the supply and to the consuming department, and at the same time showing a saving in operating costs.

Motor Trailer Has Observation Platform

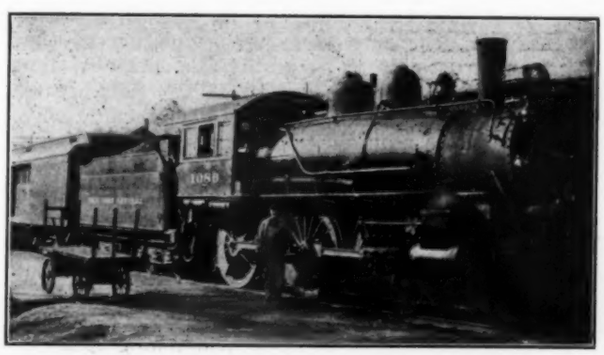
THE Mobile & Ohio recently exhibited at the Union Station, St. Louis, Mo., one of three two-car gas-electric trains, built by the St. Louis Car Company and having power plants furnished by the Electro-Motive Company, Cleveland, Ohio, and electrical equipment by the General Electric Company. The trains are notable not only for motor units of large power, but for light-weight, strongly-designed trailers, each provided with an observation platform on the rear end. The motor car, 72 ft. long, is driven by dual 220-hp. gas-electric power plants. The engine room occupies 15 ft. 5½ in. in the front end of the car. A 15-ft. standard railway postoffice compartment is located adjacent to the engine room and the balance of the car is devoted to a baggage and express room, with a capacity for 30,000 lb. The trailer is 72 ft. 8 in. over the bumpers and, being of the "Jim Crow" type, is divided into four compartments, each of which is equipped with a toilet. The seating capacity of this car is 95 passengers. The motor car weighs 64 tons, making the total weight of the train, without load, slightly less than 100 tons.



One of Three Electro-Motive Trains Built for the Mobile & Ohio by the St. Louis Car Company

The trailer is especially designed and built for operation in conjunction with the motor car, maximum consideration being given in the design to secure as light weight as consistent with the required strength. The fact that the trailer was designed especially for use in this train enabled its lines to be developed in keeping with the lines of the motor car.

* * *



New York Central locomotive No. 1038, a 4-4-0 type standing at the Jersey Shore station—This picture was taken about 1910.

I. C. C. Decisions on "Merger" Plans

C. & O. authorized to acquire Pere Marquette but not Erie —Clayton law complaints against trunk lines

WASHINGTON, D. C.

THAT the path toward railway consolidation or even that of the intermediate steps toward railway unification by acquisition of control is a steep and rocky one has again been demonstrated by the Interstate Commerce Commission in its decisions on the applications of the Chesapeake & Ohio for authority to acquire stock control of the Erie and Pere Marquette and of officers and directors of the Baltimore & Ohio, New York Central and New York, Chicago & St. Louis for authority to serve as directors of the Wheeling & Lake Erie pending determination of its disposition in a consolidation plan. The decisions were issued shortly after it became apparent that the advocates of an amended railway consolidation law had abandoned their efforts to obtain action on the Parker bill at this session of Congress.

On May 18 the commission made public a report and order dated May 8, the principal feature of which had been allowed to leak out to certain newspapers published on May 13, on the revised Van Sweringen plan, conditionally approving the C. &. O. application, which was filed on February 11, 1927, for authority to acquire control of the Pere Marquette. This is on condition that it can obtain the large additional amount of stock necessary at not to exceed $110 a share for the common (which was quoted in the market on that day at $146) and $100 for the prior preference or preferred stock. The commission, however, denied, for a variety of reasons, the application for authority to acquire control of the Erie, of which the interests in control of the C. & O. are supposed already to have working control. Two of the commissioners expressed the opinion that the application should have been denied also as to the Pere Marquette, while one thought the acquisition of both roads should have been approved.

Clayton Act Complaint Against Three Roads

On May 17 the commission issued a report and order, also dated May 8, from which five of the commissioners dissented, denying the applications of seven officers and directors of the Baltimore & Ohio, the New York Central and the Nickel Plate, which had been filed in April, 1927, for authority to serve also as directors of the Wheeling & Lake Erie, and on May 18 it followed this up by issuing complaints against the three roads, dated May 17, charging them with violation of the Clayton anti-trust law in acquiring the stock of the Wheeling without its authorization. The roads are to be given an opportunity on June 25 to show cause why they should not be required to divest themselves of the stock.

Whereas the Chesapeake and Ohio had asked authority to issue $59,502,400 of additional common stock to be offered to its stockholders at par, the commission authorized it to issue $20,000,000 par value of stock at 150, saying that if it is not enough to acquire a majority of the Pere Marquette it may submit a supplemental application, and that if it is unable to accomplish the purchase of the stock on the terms fixed it may apply the proceeds in other ways.

The majority of the commission found no objection to the proposed control of the Pere Marquette from a transportation standpoint, but in denying the application as to the Erie it said it had not "demonstrated a necessity for control of the Erie because of lack of outlet for its coal traffic", that it had not sufficiently demonstrated the merits of the proposal to use the Erie's route between Marion and Chicago, that the diversion of business from the port of Hampton Roads to the port of New York "is most uncertain", that it does not consider the relationship between the C. & O. and the Erie as complementary or supplementary, and that "acquisition of control of the Erie by the C. & O. would constitute practically an allocation of an important New York-Chicago trunk line in advance of the adoption of any general plan for the formation of competitive systems in eastern territory", and that "there is no exigency in the affairs of either the Chesapeake & Ohio or the Erie which requires action at this time."

In passing on the Wheeling & Lake Erie directors case the commission had also said that it was not in a position upon the record to render anv decision on the important questions involved or to take any unnecessary step which might be construed as an approval of the "four-system" plan or any other.

The C. & O. report also said that evidence relating to the financial transactions involved, including that "showing personal and corporate profits, use of company credit and control, and factors of similar character", had received attention, that some of the operations of subsidiary companies "are of a nature to arouse grave doubts as to their legality" and that "not all of the transactions leading to the proposed acquisition of control may be accepted as necessary, or as justified by the results to be attained, nor can they be rectified by conditions attached to our order."

Dissenting Opinions

Commissioners Campbell and Eastman dissented in part, expressing the opinion that the application should also have been denied as to the Pere Marquette, while Commissioner Porter, concurring in part, said he thought the acquisition of the Erie ought to have been approved and indicated an opinion that Congress, having failed to repeal the consolidation provisions of the act, must be presumed to have intended that some consolidations should be brought about. Commissioner Woodlock did not vote or express any opinion as to the acquisition of either road, because he had been connected with some of the earlier negotiations relating to the Pere Marquette, but he dissented from the denial of the application to issue stock at par, saying that it involves a "matter of intra-corporate policy pure and simple with which the commission has no legitimate concern".

Commssioner Eastman remarked that both the applications and the commission's action on them "have many of the characteristics of stage thunder," saying that although the commission refused to approve a union of the Nickel Plate, Chesapeake & Ohio, Erie and Pere Marquette, "the Nickel Plate and Chesapeake & Ohio are now certainly under common control, the Erie is probably under the same control, and perhaps the Pere

Marquette" and that "this situation will continue after our action herein unless something is done about it."

The plan was proposed as an intermediate step toward unification of the three lines of railroad, and the applicant represented that the advantages in operation and service to be derived from unification would be realized to a large extent during the period of stock control. It was contended that the lines are not competitive, but that they are complementary and supplementary. The present plan is the outgrowth of the denial of the applications in *Nickel Plate Unification*, 105 I.C.C. 425, decided March 2, 1926. In that case, the New York, Chicago & St. Louis Railway, a new corporation, sought authority to acquire control of the Chesapeake & Ohio, Hocking Valley, Erie, Pere Marquette, and New York, Chicago & St. Louis Railroad. The commission found that the consideration, terms, and conditions of the proposed acquisition of control were not just and reasonable, and the applications were denied. The Nickel Plate and the Chesapeake & Ohio are controlled by O. P. and M. J. Van Sweringen and their associates, and the Chesapeake & Ohio owns approximately 80 per cent of the stock of the Hocking Valley. In the present case the Nickel Plate was omitted, and instead of a new company acquiring control of the carriers named above by exchange of capital stock and by leases, the present plan contemplated acquisition by the Chesapeake & Ohio of control of the Erie and the Pere Marquette by purchase of at least a sufficient amount of the stock of each of those companies to insure such control.

An abstract of the report follows:

The applicant has already acquired through the Virginia Transportation Corporation, a subsidiary, or has secured options upon, a substantial proportion of the Erie's outstanding stock, as shown in the following table:

Held by Virginia Transportation Corp.	No. of shares	Av. cost per share	Total cost
1st preferred	137,405	$47.210	$ 6,486,882.90
2nd preferred	50,495	44.936	2,269,068.32
Common	357,300	38.583	13,785,644.84
	545,200	41,346	22,541,596.06
Under Option from O. P. Van Sweringen (Vaness Co.)			
1st preferred	23,695	45.875	1,087,008.13
2nd preferred	22,305	43.750	975,843.75
Common	345,239	34.500	11,910,745.50
	391,239	35.716	13,973,597.38
Interest Sept. 29, 1926, to June 30, 1927			628,811.89
		37.323	14,602,409.27
Total	936,439	38.994	36,515,193.44
Total with interest	936,439	39.665	37,144,005.33
Authorized to be purchased at same prices as in Van Sweringen option; owner's name not given.			
1st preferred	1,000	45.875	45,875.00
2nd preferred	2,400	43.750	105,000.00
Common	131,500	34.500	4,536,750.00
	134,900	34.749	4,687,625.00
Interest Sept. 29, 1926, to June 30, 1927			210,943.13
		36.313	4,898,568.13
Grand totals	1,071,339	39.243	42,042,573.46
Total Erie shares outstanding at the time of filing the applications	1,763,863		

The Virginia Transportation Corporation was organized under the laws of Maryland in October, 1926, at the direction of O. P. Van Sweringen, with an authorized capital stock of 500,000 shares without nominal or par value, all of which is held by the applicant. It is admittedly a convenience corporation, formed for the purpose of holding the applicant's interests in the Erie and the Pere Marquette.

While the aggregate amount shown above indicates acquisition of 60.7 per cent of stock control of the Erie, it appears that there is now no assurance of the applicant's ability to purchase the block of 134,900 shares at the prices shown. Omitting this block, the percentage is 53.1, and giving effect to $19,317,400 of Erie convertible bonds, series D, which had been converted into 386,348 shares of common stock, as of October 18, 1927, it falls to 43.6. A further reduction would result from the exercise of certain voting rights by holders of Erie prior-lien and general-lien mortgage bonds, of which there are $70,885,000—corresponding to 708,850 shares of stock outstanding. As the applicant has not submitted the details of its procedure in making further acquisitions of Erie stock, and as the market prices of such stocks have changed materially since the date of the applications, it is manifest that the cost, terms, and conditions of procuring an assured numerical majority are not now before us. It is not improbable that the ultimate cost of acquiring 51 per cent of voting control, including bonds which have been converted into stock and bonds which carry voting privileges, might exceed $65,000,000.

The situation as to Pere Marquette stocks is as follows:

Held by Virginia Transportation Corp.	No. of shares	Av. cost per share	Total cost
Prior preference	2,100	$93.655	$ 196,676.29
Preferred	12,600	90.702	1,142,838.79
Common	1,900	117.168	222,620.11
	16,600	94.105	1,562,135.19
Under option from O. P. Van Sweringen (Vaness Co.)			
Common	36,500	110.00	4,015,000.00*
Total	53,100		5,577,135.19
Expired option from Nickel Plate R. R.			
Common	169,100	110.00	18,601,000.00
Common	5,800	110.18	639,162.50
	174,900		19,240,162.50*
Authorized to be purchased at same prices: owner's name not given.	50,000	110.00	5,500,000.00*
Grand totals	278,000		30,317,297.69*
Total Pere Marquette shares outstanding	686,750		

*Carrying charges to be added.

The entire 278,000 shares represent 40.5 per cent of stock control, and after deducting the Nickel Plate shares, upon which an extension of the option, expired July 1, 1927, has been formally refused by the Nickel Plate board of directors, and after also deducting the 50,000 shares the purchase of which at the stated price is now doubtful because of the advance in market price, there remain only 53,100 shares, or 7.7 percent, of the total Pere Marquette outstanding stocks actually owned or available to the applicant at known prices.

The applicant's board of directors has authorized further purchase of stocks of the Erie and Pere Marquette, up to a numerical majority of each, at such prices and on such terms as the board may from time to time determine.

Of the aggregate cost of stocks so far acquired, $24,103,731, the applicant has contributed from its treasury $19,535,085. The difference between these sums corresponds substantially to the indebtedness carried by the Virginia Transportation Corporation, which, in exchange for 475,000 shares of Erie stocks, issued and transferred to the applicant all of its capital stock.

The purchases of Erie and Pere Marquette stocks by the applicant have been made in accordance with appropriate action by its board of directors, which also approved the adoption of the then-prevailing market price in the Van Sweringen option on 391,239 shares of Erie stocks of all classes owned by the Vaness Company, and the 134,900 shares held by other interests, the consideration to be paid for the 174,900 shares of Pere Marquette common stock controlled by the Nickel Plate Railroad through its subsidiary, the Pere Marquette Corporation, and the similar consideration to be paid for 36,500 shares of Pere Marquette common stock, held by the Vaness Company. The decision to purchase a large interest in Erie was made on September 29, 1926, and in Pere Marquette on October 18, 1926, in both cases being based on the recommendations of a special committee of five directors appointed by the chairman early in May of the same year. The application herein was approved by the stockholders at their annual meeting held on April 19, 1927, the vote being 810,437 shares in favor of, and 126,496 shares against, adoption of the ratifying resolution. The outstanding capital stock of the applicant was then $1,190,080 shares. The protective committee claims to represent 126,268 shares, held by 1269 persons.

No specific objection from a transportation standpoint has been presented to us with respect to the applicant's proposed control of the Pere Marquette. Such control, as we have seen, would in effect extend the applicant's territory in a northerly direction, embracing a large part of the state of Michigan, where a considerable amount of Chesapeake & Ohio coal is consumed, and would afford the applicant a di-

rect route to lake ferries making connection with northwestern systems. There is no substantial competition between the Chesapeake & Ohio and the Pere Marquette; on the contrary, the supplemental nature of their transportation functions is evident. Regarded as a single system, the Chesapeake & Ohio, Hocking Valley and Pere Marquette would operate in competition with the Pennsylvania, New York Central, and, to a considerable extent, with the Baltimore & Ohio, between the Atlantic seaboard on the east and the Great Lakes and Michigan points on the west. It has been argued in this and other proceedings that the great coal-producing roads should be kept separate for independent operation, to the end that this basic commodity may move freely in all connections, but we are of the opinion that no restriction on its coal distribution would result from the applicant's control of the Pere Marquette. In addition to maintaining all existing outlets and connections, the applicant would be in position to transport its coal more directly and efficiently to a territory where much of that coal is now marketed, and to connections which it does not at present reach by its own lines. Both the Chesapeake & Ohio and the Pere Marquette are operating on a sound dividend-paying basis. Through increased interchange of traffic and economies in operation, made possible by rearrangement of facilities under common management, both carriers should profit by the arrangement. We are convinced that as regards the Pere Marquette, the proposal is sound from a transportation standpoint.

Objections to Erie Control

We are unable to find that the proposal to control the Erie is to the same extent free from criticism. The applicant has not demonstrated a necessity for control of the Erie because of lack of outlet for its coal traffic. It has not shown the extent of demand for its coal at points on the Erie not reached by its own lines, nor has it established the merits of the proposal to utilize the Erie's route between Marion and Chicago for a portion of its westbound business, except to the extent that the Hocking Valley and Erie would benefit thereby. If this route possesses manifest advantages to the Chesapeake & Ohio and Erie there should be no obstacle to the making of a joint trackage agreement by them to provide for the operation here proposed. There is no assurance that the applicant would be able to change the routing of more of its coal than now moves over the Chicago division. It may also be doubted that the applicant would be able through solicitation to increase the movement of high-class traffic over its Chicago division adequately to replace the loss of coal tonnage. The diversion of eastbound business from the port of New York to the port of Hampton Roads is also most uncertain. All of the projected routes which proponents of the plan contend would be converted from "tariff routes" to "service routes" are in existence today and are capable of development. The record offers little to show that the proposed control would affect in any way the large mileage of the Erie system east of Meadville, Pa.

We do not consider that the relationship of the Chesapeake & Ohio and the Erie is complementary or supplementary. The Erie constitutes an east-and-west connection in contrast with the northerly extension provided by the Pere Marquette. The Chesapeake-Hocking lines reaching from the seaboard to Lake Erie make contact with practically every important trunk line in eastern and central territory and are thus in position to distribute their coal both east and west over many connecting lines. Control of the Erie by the applicant would tend to disturb this structure and to disrupt existing channels of traffic to a much greater extent than would its control of the Pere Marquette.

A further objection to the present acquisition of control of the Erie by the applicant is found in the fact that it would constitute practically an allocation of an important New York-Chicago trunk line in advance of the adoption of any general plan for the formation of competitive systems in eastern territory. Although it may be said that the acquisition of control through the holding of capital stock would not be such a consolidation as would necessarily be permanent, there is no exigency in the affairs of either the Chesapeake & Ohio or the Erie which requires action at this time.

Before filing the applications, the applicant expended from its treasury the sum of $19,535,085 in acquiring 119,005 shares of Erie first preferred, 50,295 shares of second preferred, and 305,700 shares of common stock. Additional purchases, made by the Virginia Transportation Corporation, brought the total purchases in Erie to 545,200 shares, and the total investment of the Virginia Transportation Corporation therein to $22,537,476. It appears that the Erie stocks thus acquired were bought at fair market prices as of the dates of purchase. The common stock of the Erie represents an equity much in excess of the prices paid, measured either by book investment or on the basis of the tentative valuation made by us. No dividends on any class of Erie stock have been paid for many years but there are indications of material improvement in the net income of the system. In part reflecting this favorable prospect, the market value of all classes of Erie stocks has risen in a marked degree since the purchases under consideration were made. As events have transpired, the applicant's present investment in Erie does not indicate any financial loss.

No purchases of stock of the Pere Marquette have been made directly by the applicant, but in its interest the Virginia Transportation Corporation has obligated itself in acquiring 2,100 shares of prior preference, 12,600 shares of preferred, and 1,900 shares of common stock, at a total cost of $1,562,135. The prices paid were consistent with the then prevailing market. The common stock had an equity, as of December 31, 1926, of approximately $148 per share based on book investment in road and equipment, and approximately $124 per share based on the final value found by us.

The only facts before us concerning the procedure proposed by the applicant for securing a majority of outstanding stock of the Pere Marquette are comprised in the statement on page 10 of this report. From this it is evident that the prosecution of the plan is contingent upon reconsideration by the Nickel Plate of its refusal to extend the option on 174,900 shares, upon the applicant's present ability to purchase 50,000 other shares at a base price of $110 per share, and upon further action of the board of directors in fixing the terms and prices of acquiring additional stock. In the absence of a presentation in definite form of the terms, conditions, and consideration upon which the applicant proposes to acquire a majority of the outstanding stock of the Pere Marquette, authority will be granted for the acquisition of certain shares at fixed prices, and for the purchase of additional shares at prices not to exceed those hereinafter named.

We are asked by the minority committee to deny these applications on the ground that the proposal is a great speculative enterprise rather than a transportation development. We are also requested to take into consideration the managerial policy of the applicant with respect to improvements and extensions of its facilities and the probable influence of merger schemes thereon. In dealing with all these questions we must confine ourselves to the essential requirements imposed by the act. Management, *per se*, does not come within our province. The evidence showing personal and corporation profits, use of company credit and control, and factors of similar character has received attention in the degree which these matters have a bearing upon the public interest in the plan immediately before us. Not all of the transactions leading to the proposed acquisition of control may be accepted as necessary, or as justified by the results to be attained, nor can they be rectified by conditions attached to our order. The operations of subsidiary companies, notably the Special Investment Corporation organized by the Nickel Plate and the Virginia Transportation Corporation by the Chesapeake & Ohio, which, in effect, pledge carrier assets and incur obligations for the carrier, are of a nature to raise grave doubts as to their legality in view of the provisions of section 20a. Again, the sale of securities to the applicant by the chairman of its board and by other directors could have been done legitimately only when all the conditions as to original cost, etc., were made known, and we consider it to have been the duty of those directors, in the fiduciary relationship to the company which they occupied, to stipulate that no personal profit accrue to them in the transactions.

Among the acts less intimately connected with this case we find the distribution of stock of the Chesapeake Corporation among the common stockholders of the Nickel Plate in consideration of the transfer of certain Chesapeake & Ohio stock which had theretofore been purchased by the Nickel Plate with its treasury assets, including the proceeds of a large issue of its refunding mortgage bonds.

As the Vaness Company holds a majority of the Nickel Plate's voting stock, and a majority of its stock is in turn owned by O. P. and M. J. Van Sweringen, these persons hold control of the Chesapeake & Ohio by their direct and indirect ownership in stock of the Chesapeake Corporation. It follows that the plan as contemplated would extend this jurisdiction to the Erie and Pere Marquette. As a matter of fact, the aggregate of Erie stocks now owned by the applicant and by the Vaness Company constitutes virtual control of that system.

Financial manipulation of great railroad properties as an accompaniment of acquisition or consolidation under the law should not be tolerated. Unification of existing lines should have its inception primarily in the traffic and transportation conditions of the territory served. If the regulation of rail-

roads, with especial reference to their unification and capitalization, can be effectively and justly administered under the acts passed by Congress for that purpose, these projects should be so controlled and governed as to be made productive of large benefits in transportation.

It is proposed to issue 595,024 additional shares ($59,502,400 par value) of common capital stock, and to offer the entire amount at par for cash, pro rata, to the holders of common capital stock of the applicant; such portion of the issue as is not so disposed of to be sold for cash at not less than par. The applicant's financial program for 1927 and 1928 contemplates the expenditure of $115,731,925, part of which will be obtained from the proceeds of the proposed stock issue. This program includes the expenditure of $22,507,488 for Erie stocks, in addition to the $19,535,085 already spent, the expenditure of $30,317,298 for Pere Marquette stocks, and the capitalization of advances aggregating $23,711,985 made to subsidiary companies "pending permanent financing thereof." If these items be deducted from the total, the carrier's immediate requirements are reduced to $39,195,154.

As compared with this cash requirement, the applicant's estimated receipts from operation during 1927 and 1928, less dividends of 10 per cent on its common stock, are over $35,000,000. The excess of its current assets over its current liabilities as of December 31, 1926, was $12,751,456. In view of these facts it is evident that a finding of necessity for an issue of additional capital stock by the applicant depends in substance upon the requirements in connection with accomplished and proposed purchases of stocks of the Pere Marquette.

The applicant is authorized to issue not to exceed 200,000 shares of its common stock for the purpose of providing funds to (1) discharge the indebtedness upon, and acquire, 16,600 shares of Pere Marquette stocks of three classes now held by the Virginia Transportation Corporation; (2) acquire 36,500 shares of Pere Marquette common stock from the Vaness Company at the cost of such stock to that company, namely, $2,522,881; and (3) acquire such other shares of Pere Marquette common stock as may be obtainable at a price not to exceed $110 per share, or such prior preference or preferred stock as may be obtainable at a price not to exceed $100 per share. The expenditure of the proceeds under these terms will not acquire a majority stock interest in the Pere Marquette, but the applicant may, if found necessary, submit a supplemental application for authority to issue additional stock for that purpose. A period of one year from the date of our order is allowed for the carrying out of this program. The applicant may, however, if it sees fit, in the event it finds that it is unable to accomplish the purchases of Pere Marquette stock on the terms herein fixed, apply the proceeds, or such part thereof as may be required, to the discharge of its interest-bearing obligations, or to expenditures chargeable to capital account and not previously capitalized.

The issue authorized will rest upon the expenditures shown in the application as having heretofore been made for additions and betterments to the applicant's property and its leased lines, on capital expenditures for the acquisition, construction, and extension of branch and spur lines, and to such extent upon the discharge and replacement of first lien and improvement 20-year mortgage bonds as may be necessary in order that the aggregate of all shall equal the par amount of stock to be issued, namely, $20,000,000. The issue is not to be considered as deriving its primary support from the asset value of Pere Marquette stocks to be acquired, although such acquisition may fairly be assumed to strengthen the applicant's financial position. The applicant's capital structure will permit the issue of additional stock in the amount which we have determined, and will be improved thereby in respect of the ratio of capital stock to funded debt.

We are of the opinion that the privilege proposed to be extended to registered holders of the applicant's stock to purchase the new stock at par and in an amount equal to 50 per cent of the par amount of their present holdings would result in imposing an unnecessary financial burden upon the applicant company. The fact that a corporation engaged in transportation has capitalizable assets in sufficient amount to support an increase in securities does not, in itself, justify such increase and the prospect of increased earnings, the improvement in ratio of stock to funded debt, and other considerations which may favor the proposal, are not to be taken as controlling factors. The necessity for the proposed issue must be demonstrated and the terms upon which it is to be sold must be found reasonable. With full respect to the rights of the applicant's stockholders to receive substantial benefits from the prosperity of the road, we do not believe that the offering of additional stock to them on the basis proposed would be consistent with the public interest. As a further condition, the additional common stock now authorized to be issued shall be offered to holders of common capital stock, pro rata, at $150.00 per share, to the extent of one share of additional stock for each six shares of their respective holdings as now registered upon the transfer books of the applicant. Such portion of the issue as may not be so disposed of shall be sold for cash at not less than $150.00 per share.

The applicant's position in regard to short lines is that the proposed acquisition of control will not change the existing situation but in the event of unification or consolidation each short line will be considered with a view to acquisition.

Although the applicant's view that the contemplated acquisition of control will not be a unification or consolidation is technically correct, it is nevertheless acknowledged to be a step toward that result. The probable effect upon connecting short lines should be considered. Since it may be assumed that no present change in the business relations between the applicant and the short lines with which it connects is in contemplation, our principal concern regards the future of the short lines connecting with the lines of the companies over which control is to be extended. Under proper circumstances we would be justified in conditioning our approval of a proposed acquisition upon the acquisition of the short lines involved, or provision for the maintenance of such relations for their protection as the public interest might require.

As above shown, only three of the short lines connect with the lines of the Pere Marquette. In the case of the Chicago, Attica & Southern the record does not permit a finding upon the question of public convenience and necessity and no allocation of this road to any trunk line or system is desirable at this time. The Arcadia & Betsey River is not at this time engaged in interstate commerce and therefore does not come within our jurisdiction, and the Detroit & Mackinac intervened solely for the purpose of placing in the record a certain agreement made between it and the Pere Marquette covering the joint use of facilities at Bay City, Michigan, to the end that its rights thereunder be protected. Contractual relations of this kind will not be affected by our decision.

Not all of the short lines situated in the territory of the applicant and the Pere Marquette entered appearances in the case now before us. Under the announced policy of the applicant consideration will be given to each short line in this territory when and if unification or consolidation of the roads embraced in the application is undertaken. In view of the statement that the plan is a step toward unification, it is urged that the applicant initiate an investigation of all the lesser lines of railroad which maintain direct traffic relations with its own lines or those of the Pere Marquette to the end that a final and equitable disposition of them may be expedited.

With respect to short lines, and all other rail connections, it is understood that, so far as lies within the power of the applicant, existing routes and channels of trade and commerce heretofore established by other carriers in connection with the Chesapeake & Ohio or the Pere Marquette will be preserved, and existing gateways for the interchange of traffic with all other carriers will be maintained.

Wheeling & Lake Erie Decision

By a vote of 6 to 5 the commission in a decision made public on May 17 denied the applications of officers and directors of the Baltimore & Ohio, New York Central and New York, Chicago & St. Louis for authority to serve as directors of the Wheeling & Lake Erie, in which the three roads each acquired a stock interest in February and March, 1927. Notwithstanding the form of the proceeding, the majority report said, the issue is the most advantageous disposition of the Wheeling in a general consolidation of eastern railroads. After referring to the relation of the Wheeling & Lake Erie to the "four-system" plan tentatively discussed with a committee of the commission in 1924 the report says it was never formally presented to the commission and that it is not in a position upon the record to render any decision upon the important questions involved or to take any unnecessary step which might be construed as an approval of that plan or any other. It also said that the wisdom of providing joint control instead of single control of important lines, with the possible exception of terminal lines, seems very questionable. The opinion is also expressed that the presentation of the applications for authority to serve as directors is premature and that it should have been preceded by an authorization, secured through appropriate proceedings, to

acquire the stock which the applicants desire to represent on the Wheeling board.

Commissioner Taylor, in a concurring opinion, said that the granting of the applications would be a flagrant violation of the Clayton law.

Commissioners Meyer and Woodlock wrote dissenting opinions and Commissioners Aitchison, Brainerd and Porter concurred in the views expressed by Commissioner Meyer, who said that the public interest would be better served by permitting the representation of the stock on the Wheeling board, as sought, pending the presentation and action upon a plan. Commissioner Woodlock said that to grant the applications would be merely to give frank and honest expression to the state of the facts and render more easy the application of the law to those facts.

On the following day the commission made public formal complaints charging the Baltimore & Ohio, New York Central and New York, Chicago & St. Louis, "on information and belief" with violation of section 7 of the Clayton law in acquiring the stock of the Wheeling & Lake Erie without the approval and authorization of the commission on the ground that the effect may be to substantially lessen competition between the roads. They were given an opportunity to show cause at a hearing on June 25, why an order should not be entered requiring them to divest themselves of all interest in the stock of the Wheeling company and were directed to answer the complaints within 30 days.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading crossed the million mark for the first time in 1928 during the week ended May 12, when it reached a total of 1,001,983 cars. This was a decrease of 27,441 cars as compared with loading in the corresponding week of last year, however, and of 27,765 cars as compared with 1926. Grain and grain products and miscellaneous freight were the only commodity classifications in which loading showed an increase as compared with a year ago. Loading of ore continued to lag, the total of 38,249 cars for the week representing a decline of 20,135 cars for the corresponding week of last year. Coal loading compared more favorably, the total of 159,714 cars being only 3,307 cars lower than the total a year ago. Loading in the Central Western and Southwestern districts only were larger than in the corresponding week of 1927. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, May 12, 1928.

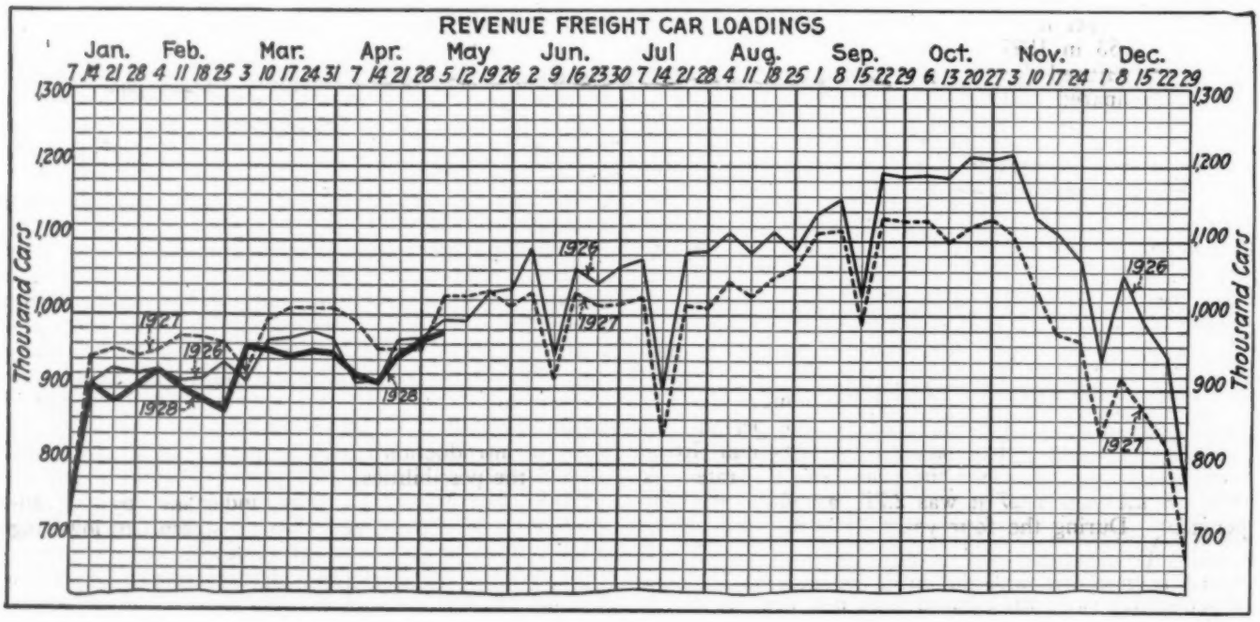
Districts	1928	1927	1926
Eastern	238,713	242,000	251,403
Allegheny	203,389	210,798	211,042
Pocahontas	55,706	63,000	56,390
Southern	143,729	153,290	148,547
Northwestern	146,934	155,690	153,001
Central Western	137,595	133,992	134,639
Southwestern	75,917	70,654	74,726
Total Western Districts	360,446	360,336	362,366
Total All Roads	1,001,983	1,029,424	1,029,748
Commodities			
Grain and Grain Products	42,106	40,225	39,703
Live Stock	27,018	29,156	26,464
Coal	159,714	163,021	167,678
Coke	10,231	10,908	11,797
Forest Products	67,138	70,994	76,003
Ore	38,249	58,384	54,241
Merchandise L.C.L.	261,082	262,135	267,284
Miscellaneous	396,445	394,601	386,578
May 12	1,001,983	1,029,424	1,029,748
May 5	979,662	1,024,761	996,216
April 28	961,928	1,021,576	995,408
April 21	944,694	950,545	073,158
April 14	912,377	949,561	964,794
Cumulative total, 19 weeks	17,509,388	18,470,899	18,058,395

The freight car surplus during the period ended May 8 averaged 301,897 cars, as compared with 320,762 cars on April 30. The total included 128,095 box cars. 125,628 coal cars, 22,016 stock cars and 16,356 refrigerator cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended May 12 totalled 69,446 cars, an increase of 5,168 cars over the previous week and an increase of 7,362 cars over the same week last year.

	Total cars Loaded	Total cars Rec'd from Connections
Total for Canada		
May 12, 1928	69,446	41,601
May 5, 1928	64,278	42,145
April 28, 1928	63,763	41,972
May 14, 1927	62,084	39,256
Cumulative Totals for Canada		
May 12, 1928	1,193,327	763,085
May 14, 1927	1,149,513	745,664
May 15, 1926	1,055,760	712,267



Safety Council Awards Plaques for Accident Prevention

Contest will be conducted annually among railroads in recognition of the results obtained

BRONZE plaques were awarded by the National Safety Council on May 21 to the seven railroads which had the lowest casualty rate during 1927 in each of seven groups arranged according to man-hour exposure. This is the first award made by the council under a plan for an annual contest which it has established for Class I railroads on the basis of the number of casualties (killed and injured) to railway employees, on duty, in train, train service and non-train accidents, per million man-hours worked, according to the official records of the Interstate Commerce Commission. The awards will be made each year on the same basis.

Under the plan of the contest which is limited to the employees of Class I railroads, the contesting railroads are classified under seven different groups in accordance with their respective man-hour exposure as follows:

Group A to include all units and systems having 100,000,000 or more man-hours.
Group B—50,000,000 to 100,000,000 man-hours
Group C—20,000,000 to 50,000,000 man-hours
Group D—10,000,000 to 20,000,000 man-hours
Group E— 5,000,000 to 10,000,000 man-hours
Group F— 2,000,000 to 5,000,000 man-hours
Group G—Less than 2,000,000 man-hours.

These man hours are limited to rail man hours, and do not include water man hours where water transportation is involved. The railroads of each group are ranked in accordance with their total casualty rate (killed plus injured per million man hours).

The awards were presented to the seven roads having the lowest total casualty rate for their respective groups; but no railroad shall be eligible to win a group award more than twice in succession.

As no awards were made in the past to the leaders of the various groups as published in the safety report of the commission, it was decided that the initial or 1927 award should include recognition of the previous safety accomplishments of these group leaders.

The Union Pacific System was designated winner in Group A of 23 contestants, with the lowest total casualty rate, for five consecutive years. Its total casualty rate of 7.89 (per million man hours) for 1923 was reduced to 3.53 in 1927 or 55 per cent. The number killed and injured during the years 1924 to 1927, inclusive, compared with the number killed and injured during the year 1923, indicates a saving of 132 lives and the prevention of 1913 reportable injuries on this system during the four-year period. The average fatality rate of the system for these four years was 0.17, and for the year 1927 was 0.10. Had the other 14 systems of this group attained this fatality rate of 0.10 for the year 1927 the 927 fatalities recorded against these systems for the year would have been reduced to 279 a saving of 648 lives in one year; and for the four-year period, 1924-27, at the Union Pacific system average fatality rate of 0.17, the 3,694 fatalities that occurred on these 14 systems would have been reduced to 1914 fatalities—a saving of 1,780 lives for the period.

The Union Pacific Railroad was the winner in Group B of 19 contestants. For the year 1923 the rate was 5.0; for the year 1927 it was 2.72; a reduction of 45 per cent. During the four years, 1924 to 1927, inclusive, 81 lives were saved on this railroad, with a reduction of 631 injuries, compared with the number killed and injured during the year 1923. The average fatality rate for these four years was 0.14, and for the year 1927 was 0.09.

The Oregon Short Line was designated winner in Group C of 25 contestants. During the past four years the total casualty rate of this road was reduced 70 per cent, with a cumulative saving of 14 lives and the prevention of 899 reportable injuries, compared with the number killed and injured during the year 1923.

The Los Angeles & Salt Lake has been designated winner in Group D of 25 contestants. For the year 1923 the casualty rate of this road was 4.86 and for the year 1927 was 3.24—a reduction of 33 per cent.

The Duluth, Missabe & Northern was designated winner in Group E of 21 contestants. The casualty rate for the year 1923 was 7.79, and for the year 1927 was 2.88—a reduction of 63 per cent. For three consecutive years, with a cumulative exposure of more than 20,000,000 man-hours, this railroad operated without a fatal accident; and for the years 1925 and 1926 received the E. H. Harriman Memorial Medal for the best general safety record of all railroads of its class. This is a singular distinction.

The Duluth & Iron Range was the winner in Group F of 32 contestants. Having operated two consecutive years without a fatality, and with a year-by-year decrease in injuries, this railroad has reduced its total casualty rate to 2.45 for the year 1927—a reduction of 77 per cent. The Baltimore, Chesapeake & Atlantic was the winner in Group G of 42 contestants, and has a five-year clear fatality record. The average total casualty rate of 2.72 has been calculated against a cumulative exposure of 5,155,117 net man hours.

Awards Were Made at Chicago

The awards were presented by Homer E. Niesz, president of the council at a dinner held at the Chicago Athletic Association and attended by several railroad presidents and other officers including the representatives of the winning roads who received the plaques on behalf of the employees. These were, E. E. Calvin, vice-president of operations of the Union Pacific System, who accepted Group A award; W. M. Jeffers, general manager of the Union Pacific Railroad, Group B; H. V. Platt, general manager of the Oregon Short Line, Group C; F. H. Knickerbocker, general manager of the Los Angeles & Salt Lake, Group D; W. A. McGonagle, president of the Duluth, Missabe & Northern, Group E; H. Johnson, president and general manager, of the Duluth & Iron Range, Group F, and T. H. Carrow, superintendent of safety of the Pennsylvania who accepted for the Baltimore, Chesapeake & Atlantic, Group G.

As an introduction to the presentation Mr. Niesz explained the possibilities of further improvement in railroad safety. The safety work undertaken by the railroads in the past four years, with its resultant lowering

of the rate of casualties, has meant the saving of the lives of 977 employees and a reduction of 119,000 in reportable accidents among railroad workers based on the 1923 rate.

The remarks of acceptance made by the representatives showed what an earnest effort had been made by the employees to reduce accidents and how the employees appreciated the interest expressed by the council through the awards.

Samuel O. Dunn, editor of the *Railway Age*, traced the development of safety and showed how it has been a pacemaker for improving efficiency among employees. He also described how safety work had aided in changing public sentiment.

"The safety record made by the railways of the United States in 1927," he said, "was the result of great efforts by railway managements and employees over a long period of years, and represents, perhaps, the greatest achievement in promoting public safety that can be credited to any industry in this country. The safety record made by the railways last year easily surpassed that of any previous year, and when compared with the records of 10 and 20 years ago reads almost like a romance."

Mr. Dunn gave some heretofore unpublished data regarding railway safety in 1927. "The number of passengers killed was only 91, or one for each 9,100,000 passengers carried", he said. "The best previous record was that of 1923, when one passenger in each 7,216,000 carried was killed.

"The number of fatalities to passengers last year was only one-third as great in proportion to the number carried as 10 years ago, and less than one-sixth as great in proportion as 20 years ago.

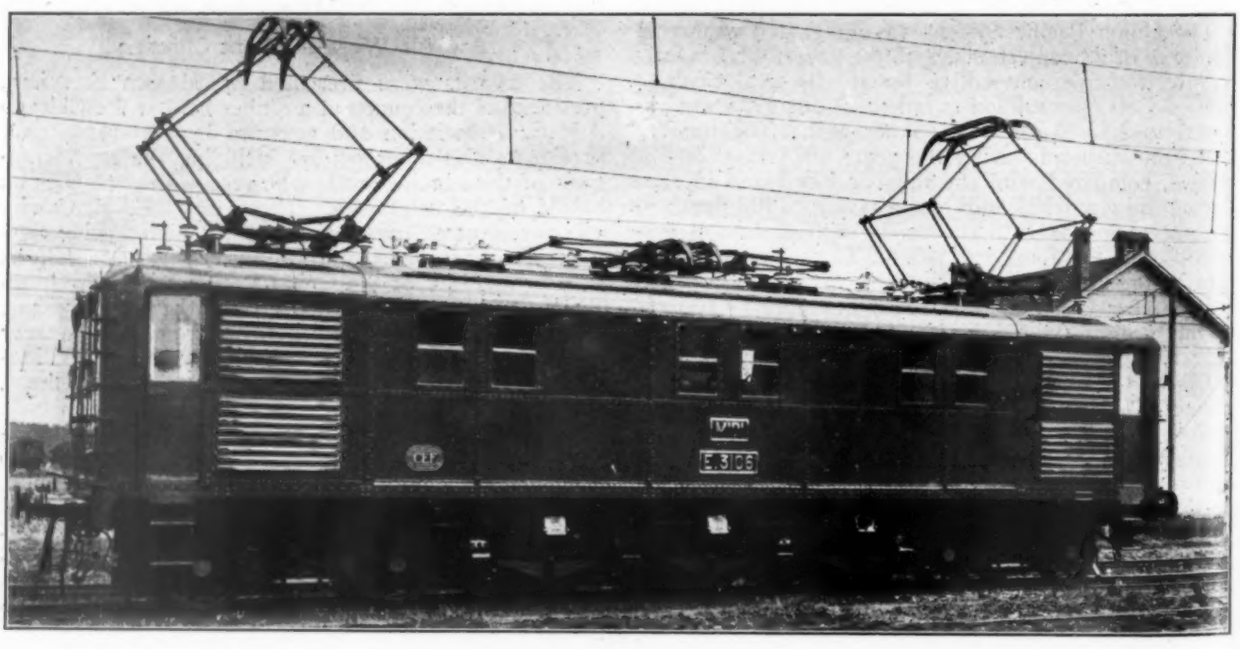
"The number of railway employees killed in 1927 was 1,493. This was one for each 1,180 employees, and the best record ever made. It was less than one-half as great in proportion to the number of employees as 10 years ago, and less than one-third as great in proportion as 20 years ago.

"The remarkable progress which has been made year by year in increasing the safety of railway travel and employment has been due partly to the investment of a large amount of capital for this purpose. During the last eight years 324 million dollars of the new capital invested by the railways has been spent exclusively to increase safety.

"The most important and effective influence for increasing safety, however, has been the organized cooperation of managements and employees in remedying dangerous conditions, and especially in educating and inspiring the entire railway personnel to put safety in operation above every other consideration. The only kind of accidents which, over a period of years, have so increased as to impair the record has been those occurring at crossings of highways and railways. The number of fatalities at highway crossings in 1907 was 1,934; in 1917, 1,969 and in 1927, 2,371. Even this bad record of 1927 was an improvement, however, over that of 1926, in spite of the fact that the number of automobiles in the country showed an increase of five per cent."

Train Speeds in Europe

THE Railway Gazette (London) in a recent issue presented tabulations of fast train schedules in Great Britain and France, the German railways not being included because of the fact that speeds in that country have not yet been brought back to pre-war standards. These tables are reproduced herewith. In Great Britain 32 runs are shown at speeds of 58 m.p.h. or more, start to stop, and France has 16 in the same category. Some of the British runs are performed by "slip coaches," i.e. cars dropped from the rear of trains, carrying passengers for stations where the trains do not stop. This involves some duplication. Eliminating these "slips" the number of 58 m.p.h. British runs is reduced to 26, with actual trains involved totaling 23. Of these trains the Great Western has 14, the London, Midland & Scottish 5 and the London & North Eastern 4. Trains of this high-speed category make a daily mileage of 1,451.2 on the Great Western, 444 on the L. M. S. and 206.7 on the L. N. E. In France 14 of the 16 high-speed runs are made on the Northern, which has a daily mile-



Southern Railway (France) Electric Locomotive of Type Which Pulls World's Fastest Train (91.8 Miles in 89 Minutes—61.9 M. P. H.)

age of 1,556.2 of such service, while the Southern of France has two runs (one train) with a daily mileage of 129.8 The Northern of France has at least 12 express trains which make an average speed of 60 m.p.h. for 90 miles or more, but which do not figure in the French table herewith because they do not average that speed from start to stop. The highest speed shown in any of the tables ("slip carriage" excluded) is that of the South Express (Southern of France) which makes the 91.8-mile run from Bordeaux to Dax at a speed of 61.9 m.p.h.

Daily Runs on French Railways at over 58 m.p.h. Start-to-Stop

Railway	From	To	Distance Miles	Time Min.	Speed M.P.H.	Train
Southern	Bordeaux	Dax	91.8	89	61.9	South Express
Northern	Paris	St. Quentin	95.2	94	60.7	Berlin Express
"	"	Aulnoye	134.0	135	59.5	Amsterdam Exp.
"	"	Abbeville	109.1	110	59.4	2 Calais Boat Expresses
"	"	Arras	119.4	121	59.2	Lille Express
"	(Paris	Jeumont)				North Express
	(Jeumont	Paris)	147.8	150	59.1	Boulogne Boat
"	Paris	Etaples	140.8	143	59.1	Express
"	"	Compiegne	52.0	53	58.8	" " "
"	Arras	Longueau	41.1	42	58.7	" " "
"	Etaples	Amiens	59.5	61	58.5	.....
"	Aulnoye	St. Quentin	38.8	40	58.2	.....
"	(Paris	Calais)				
	(Calais	Paris)	184.3	190	58.2	Golden Arrow
Southern	Dax	Bayonne	31.0	32	58.0	South Express

Other Long and Fast French Runs

Railway	From	To	Distance Miles	Time Min.	Speed P.H.	Train
Northern	Dunkerque	Paris	193.9	203	57.3	Tilbury Boat Express
Eastern	Bar-sur-Aube	Chalons	50.5	53	57.2	.....
"	Paris	"	107.0	113	57.0	.....
Northern	Paris	Dunkerque	193.9	205	56.8	Tilbury Boat Express
Eastern	Chaumont	Troyes	59.4	63	56.7	Basle Express
"	Paris	"	103.3	110	56.4	" "
Orleans	"	LesAubrais	73.9	80	55.5	South Express
Northern	(Paris	Brussels)				
	(Brussels	Paris)	193.0	210	55.2	North Star

British Railway Runs Timed at over 58 m.p.h. Start-to-Stop

Railway	Train	From	To	Distance Miles	Time Min.	Speed M.P.H.
G.W.	*5.55 p.m.	Swindon	Chippenham	16.7	16	62.5
"	3.45 p.m.	Swindon	Paddington	77.3	75	61.8
"	(*11.15 a.m.)					
	(* 1.15 p.m.)	Paddington	Bath	106.9	105	61.6
L.N.E.	9.01 p.m.	Darlington	York	44.1	43	61.5
"	4.30 a.m.	Leicester	Nottingham §	22.6	22	61.5
G.W.	5.55 p.m.	Swindon	Bath	29.6	29	61.2
L.N.E.	5.49 p.m.	Aylesbury	Leicester	65.1	65	60.1
"	3.40 a.m.	Brackley	Rugby	23.9	24	59.8
"	4.06 a.m.	Rugby	Leicester	19.9	20	59.7
G.W.	(*10.30 a.m.)					
	(12.00 noon)	Paddington	Exeter	173.7	175	59.6
"	(11.15 a.m.)					
	(1.15 p.m.)	Paddington	Bristol †	118.3	120	59.2
L.M.S.	(9.21 a.m.	Willesden Jc.	Birmingham)			
	(4.50 p.m.	Birmingham	Willesden Jc.)	107.5	109	59.2
G.W.	*10.30 a.m.	Paddington	Taunton	142.9	145	59.1
"	(11.45 a.m.)					
	(5.15 p.m.)	Bristol ‡	Paddington	117.6	120	58.8
"	*9.42 a.m.	High Wycombe	Leamington	60.8	62	58.8
"	4.30 p.m.	Paddington	Swindon	77.3	79	58.7
"	*9.42 a.m.	High Wycombe	Banbury	41.0	42	58.6
"	(*10.30 a.m.)					
	(* 3.30 p.m.)	Paddington	Westbury	95.6	98	58.5
L.M.S.	9.04 a.m.	Luton	Kettering	41.0	42	58.3
L.N.E.	7.31 p.m.	Woodford	Aylesbury	31.1	32	58.3
L.M.S.	(2.20 p.m.)					
	(5.50 p.m.)	Euston	Coventry	94.0	97	58.2
G.W.	4.10 p.m.	Paddington	Leamington	87.3	90	58.2
"	5.00 p.m.	Paddington	Kemble	91.0	94	58.1
"	2.18 p.m.	Evesham	Worcester	35.8	37	58.1
"	1.10 p.m.	Swindon	Paddington	77.3	80	58.0

* By slip carriage. † Via Bath. ‡ Via Badminton. § Arkwright Street Station.

The Great Western in England follows this record closely with a train which operates from Swindon to the London terminal (Paddington), 77.3 miles at 61.8 m.p.h. The South Express is operated on its record schedule by electric locomotives.

With relation to the effect of speed on safety, the Railway Gazette points out that the Great Western, which has the highest record of speed for the British railways also stands at the top of the list from the standpoint of safety—no passengers having been killed in train accidents on that line for 23 years.

Senate Committee Favors Repeal of Surcharge

WASHINGTON, D. C.

SENATOR DILL, on May 22, submitted to the Senate a favorable report on the bill introduced by Senator Robinson, of Arkansas, to abolish the Pullman surcharge, which has heretofore been passed by the Senate in previous sessions but which has failed of passage in the House. The report takes the position that the surcharge involves a "double payment" and that the railroads do not need the money. The report says:

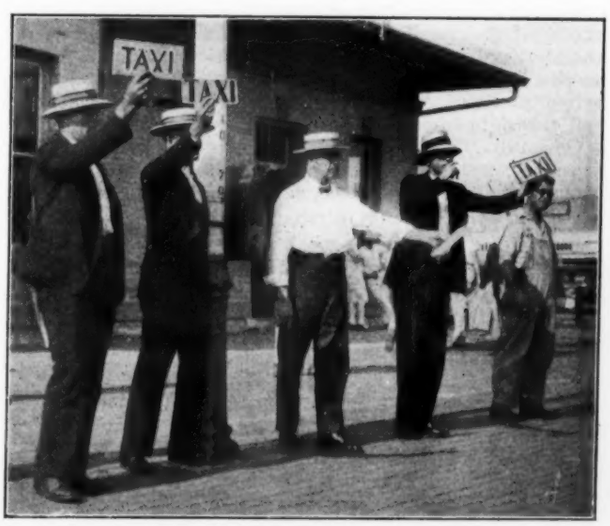
The Pullman surcharge is a tax that was first placed on the traveling public during the war-time period, namely, June 10, 1918. The then Director General of Railroads, William G. McAdoo, discontinued it promptly following the armistice. Two years later, the Interstate Commerce Commission on its own voluntary motion re-established this surcharge. The purpose of this bill is to repeal the Pullman surcharge.

The Interstate Commerce Commission gave as a reason for reestablishing the Pullman surcharge, the need of revenue by the railroads to meet the expected increase in wages to be made by the Railorad Labor Board. The estimated increase was $618,000,000. The actual increase was $518,000,000. In addition to that, the number of railroad employees decreased 243,551, between 1920 and 1926 and the average wage decreased from $1,820 in 1920 to $1,655 in 1926. Thus, the decrease in wages alone amounts to more than $600,000,000 per year, so that the reason the Interstate Commerce Commission had for reestablishing the Pullman surcharge to collect $40,000,000 extra thereby, has long ago been removed. The Senate has heretofore recognized this fact by three times passing bills similar to this providing for its repeal.

The annual reports and statistics concerning railroads show that at the present time, the railroads generally are on sound footing and do not need the surcharge. Less than 1 per cent of the surcharge goes to small railroads that might be said to be in need of it.

Congress has repealed practically every other war tax and the time has come to insist upon the repeal of the Pullman surtax which was created as a war tax also. The repeal of this surtax in no way interferes with rate making. It simply lays down a policy to the effect that the Interstate Commerce Commission shall not permit double payment for use of Pullman cars. The repeal of this Pullman surtax will in no way affect the proceedings before the Interstate Commerce Commission to readjust freight rates. Such readjustments should be made upon its merits and the Pullman passengers should not be penalized to make up needed revenues of some few railroads which lack the necessary freight-making income

* * *



The Silent Appeal

Shouting Forbidden! Scene at the station of the Seaboard Air Line, in St. Petersburg, Florida, on the arrival of a through train. The picture was taken in the season of light traffic.

Communications and Books

Increase in Pension Costs

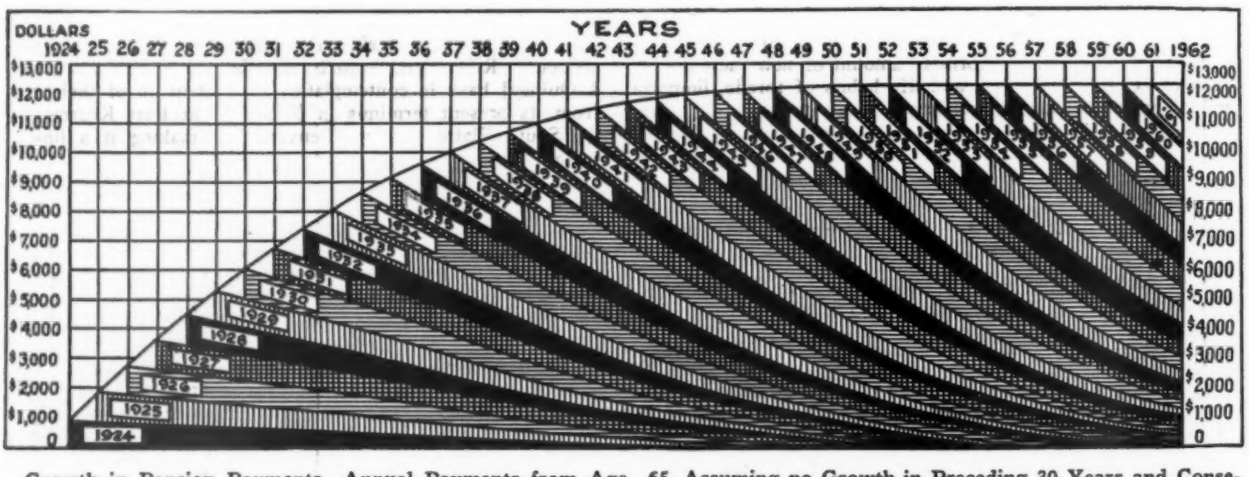
NEW YORK CITY.

TO THE EDITOR:

Your recent editorials on the subject of pension costs have been of great interest to all who have given this important subject any consideration.

It may be worth while to explain to the correspondent who asks as to the increase in pension costs that the first cause of increase is the fact that, leaving aside any increase in the number of employees or any increase in the basis of payment, pension costs continue to rise for approximately 30 years because that is the period that under the usual mortality tables may be expected to elapse before the number of persons dying each year equals the number of persons added to the rolls.

A very clear illustration of the working of this principle is shown on the attached chart, in which the amount of pensions beginning each year is assumed to be the same and the annual reduction in the payments arising out of each year's grants on account of deaths is indicated by the narrowing of the band indicating the payments.



Growth in Pension Payments—Annual Payments from Age 65, Assuming no Growth in Preceding 30 Years and Consequent Equal Number of Employees Pensioned Each Year

In view of the fact that most pension plans call for a service period of at least 20 years before eligibility for pension, this period of 20 years is added to the 30-year growth of the pension payments on a stable industry, thus making the total period of increase 50 years after the number of employees has ceased to grow.

Obviously, any increase in the amount of pension per man pensioned, and any increase in the number of pensioners becoming eligible each year because of earlier increases in the personnel, very markedly accentuate this curve.

INGALLS KIMBALL,
Director of Group Annuities,
Metropolitan Life Insurance Company.

Electric Refrigeration in English Dining Cars

LONDON, ENGLAND.

TO THE EDITOR:

"We have read with much interest W. C. Marshall's article on Electrical Refrigeration on Diners" which appeared in the *Railway Age* of April 7. The Chicago, Milwaukee, St. Paul & Pacific is to be congratulated on its enterprise in equipping one of its dining cars with electrical refrigeration, and, judging by the experience of the London & North Eastern, the officers are likely to be perfectly satisfied with the working of the "Frigidaire" equipment.

As long ago as December, 1925, the London & North Eastern fitted a "Frigidaire" plant in one of its dining cars. The experimental plant was so successful that three more restaurant cars were equipped shortly afterwards, and in June, 1927, a further lot of three cars was fitted out. The cost of equipping each car, including the installation of an ice cream cabinet, is about £200. The saving in ice is estimated at £30 for each car for 12 months, and additional revenue to the extent of possibly £25 per annum is derived from the sale of ice cream to passengers. The annual working cost, including maintenance and depreciation, may be put at £40 for each car. In addition, there is some saving in foodstuffs which cannot very well be expressed in money. In every way the refrigerating plants are a great improvement over the old ice boxes.

I thought it would interest you to know that the Great Northern, which has now been amalgamated with the London & North Eastern, led the way in equipping one of its restaurant car kitchens with all-electric cooking, and the London & North Eastern was also the pioneer in adopting electrical refrigeration.

R. BELL.
Assistant General Manager, London & North Eastern.

[The electric cooking referred to in the preceding letter was first installed on the Great Northern Railway—now a part of the London & North Eastern—in 1921. Power for cooking on the original installation was supplied by an 80-cell battery and two 6-kw., belt-driven axle generators. Connections to an alternating current supply were made at terminals, at which time a quantity of water was heated and some preparatory cooking done. The weight of the battery was 1880 lb. and the diner was included as a part of an articulated train consisting of five cars on six trucks. The train schedule was as follows: Leave Kings Cross (London), 10:10 a.m.; arrive Leeds, 2:10 p.m.; leave Leeds, 5:30 p.m.; arrive Kings Cross, 9:30 p. m. The distance from King's Cross to Leeds is 186 miles. The diner seated 78 persons and frequently served from 150 to 200 meals on a run. Electric refrigeration was installed on the London & North Eastern Railway in 1925. Provision was made for a cooling capacity of 25 cu. ft. and a freezing capacity of 12 to 15 lb. of ice per four hours. The refrigerating machine was driven by a ¼-hp. motor, receiving power in some cases from the cooking battery and in others from the 32-volt train lighting battery—EDITOR.]

New Books

Marine Borers and Their Relation to Marine Construction on the Pacific Coast. By C. L. Hill and C. A. Kofoid, editors-in-chief. 357 pages. 7 in. by 10½ in., illustrated. Published by the University of California Press, Berkeley, Cal. Price, paper $4, Cloth $5. Carriage extra, weight 3 lb.

This is the final report of the San Francisco Bay Marine Piling Committee which was organized in 1920 to make an exhaustive study of the entire subject of the destructive agencies. This study embraced not only the service records of piling subjected to various preservative treatments and the development of a much more complete knowledge of the biology of marine life responsible for the destruction of wood, but also experimental work with new preservatives and various forms of protective coverings for wooden piles as well as a critical investigation of the behavior of concrete in sea water. The results of all this work are presented fully in the report, together with the conclusion that creosote treatment properly carried out is the most effective protection for wood emersed in infested water and that well-constructed concrete piles or cylinders promise longer life than other forms of construction, but at a considerable increase in cost. These conclusions are supplemented by recommended specifications for creosoting Douglas fir piling for use in sea water and specifications for concrete for marine construction. The most interesting feature of the report is the enormous amount of new facts it contains concerning the nature and life habits of teredo, limnoria and other wood-boring organisms.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Annual Report of the Inland Waterways Corporation, Calendar Year 1927, to the Secretary of War, by Major Gen. T. Q. Ashburn, Chairman and Executive. "Terminal situation on upper river" p.8-9. "Joint rail-water routes and rates" p.9-11. "Rate adjustments and increase of territory served" p.19-33. 66 p. Pub. by U. S. Print. Off., Washington, D. C., 10 cents.

Freight Commodity Statistics, Class I Steam Railways in the United States, Year Ended December 31, 1927, compiled by Bureau of Statistics, Interstate Commerce Commission. Statement no. 28100 (4th in series) showing revenue freight originated and total revenue freight carried by commodities, railroads, regions, districts and totals for United States. 135 p. Pub. by U. S. Govt. Print. Off., Washington, D. C., 50 cents.

Informational Resources of Washington, 1928, edited by Dorsey W. Hyde, Jr. and Miles O. Price. Two hundred and eight libraries are listed in this handbook with a brief description of the scope of each one, librarian's name, and location of library. About 480 subjects are listed in the index ranging from Accounting, Artillery, Aviation, Chinese language and literature and Disasters and Diplomacy through Fur seals, Government ownership, Isostasy, Pearls, Railroads, Statistics, Unemployment, Warehouses, and Whales, 52 p. Pub. by District of Columbia Library Association, Washington, D. C., $1.

Standards in Industry, edited by Richard H. Lansburgh. Thirty-six articles on recent development in standards of product, material, equipment and performance in industry and effect on current economic conditions. "Standard Purchase Specifications in Railroad Operation" by Robert P. Brecht, p. 191-198, 282 p. Pub. by American Academy of Political and Social Science, Philadelphia, Penn., as its *Annuals,* May 1928. $2.

Periodical Articles

Civic Planning for Airports and Airways, by J. Nolen. Society of Automotive Engineers Journal, April 1928, p.411-417.

Some Common Delusions Concerning Depreciation, by Ernest F. DuBrul. "Illustrative analysis of depreciation account of a large well-managed corporation" p.375-377. Mechanical Engineering, May 1928, p.373-377.

Looking Backward

Fifty Years Ago

The House Committee on Railways has agreed to report a bill authorizing the President to appoint a commissioner to inquire into the number and means of prevention of railroad accidents in the United States, and to ascertain the number of persons killed or injured thereby.—*Chicago Railway Review,* May 25, 1878.

Fifteen railroad companies in the Middle West sold 917,000 acres of land in the first four months of 1878 at an average price of $6.97 per acre. The Grand Rapids & Indiana [now part of the Pennsylvania] reported the highest average price per acre—$12.68—while the average sale price for Chicago, Burlington & Quincy and Illinois Central lands was $12.03 and $10 per acre respectively.—*Railway Age,* May 23, 1878.

A new railway project has been brought to the notice of the public the past week. The officials of the Burlington & Missouri River [now part of the Chicago, Burlington & Quincy] have in contemplation the extension of their road from its present terminus in Nebraska, at Fort Kearney, up the South Platte river to Denver, thus making it a line of almost transcontinental importance and an imposing rival to the Kansas Pacific [now part of the Union Pacific].—*Chicago Railway Review,* May 25, 1878.

Twenty-Five Years Ago

The Chicago, Burlington & Quincy has joined the Chicago & North Western and the Chicago, Milwaukee & St. Paul in reducing the time of its limited train from St. Paul, Minn., to Chicago to 12 hours.—*Railway Age,* in the issue of May 29, 1903.

The jurisdiction of L. M. Allen, general passenger agent of the lines of the Chicago, Rock Island & Pacific east of the Missouri river, has been extended to include the lines west of the Missouri river.—*Railway Age,* in the issue of May 29, 1903.

On May 24, acting under an order of the United States Court at Pittsburgh, permitting the removal of the Western Union wires from the Pennsylvania right-of-way, forces of men were set at work along the lines of that road in Pennsylvania, and by night thousands of poles and thousands of miles of wire had been cut down. The work continued during the following day, until Western Union wires had been removed from the Pennsylvania main line between Pittsburgh and the New Jersey state line, and from the Cumberland Valley, the West Jersey & Seashore and Philadelphia, Wilmington & Baltimore.—*Railway Age,* May 29, 1903.

Ten Years Ago

Director-General McAdoo has announced a plan for placing the operation of each railroad in the hands of a federal manager to be appointed by the Railroad Administration and displacing in the matter of authority the presidents of the roads. The federal managers will be chosen as far as practicable from operating officers of the property involved and in most instances will be operating vice-presidents.—*Railway Age,* May 24, 1918.

The International Railway Fuel Association abandoned its formal program for this year and in turning its annual convention into a popular meeting, attracted an attendance of nearly 1,500 persons. Inspirational talks were given by returned service men and railway officers, emphasizing the importance to success in the war of the production of clean coal, of its prompt transportation and its conservation in railway use.—*Railway Review,* May 25, 1918.

Odds and Ends of Railroading

P. G. Pendergast, clerk for the Pennsylvania at Lucknow, Pa., entered railway service from a highly unusual profession. Pendergast was formerly a contortionist in vaudeville, where he was billed as "The Human Snake."

The seventies of the last century witnessed the building of several peculiar railways. No railway, then or since, however, has had as short a life as the Billerica & Bedford. This line was opened November 28, 1877, and ceased operations January 1, 1878, or a total life of 34 days. The road was a 9-mile line in Massachusetts and its gage was two feet. Insufficient financing forced it into bankruptcy almost as soon as the line opened.

The Pacific Railway Club operates out on the western edge of the continent where "men is men and space don't count." Of the thirty-six officers and employees admitted to the club at its May meeting, nineteen have their headquarters and homes more than five hundred miles from San Francisco and Oakland in which the club alternates its meeting. Six of these nineteen will have to travel nearly 1000 miles to attend a club meeting.

But the Franchise Lingers On

John Hoffman died at Cincinnati, Ohio, on April 15—an event, you will say, hardly worthy of more than passing notice. But Mr. Hoffman had worked for railroads for 58 years and then, too, he constituted about the last link that held the past history of the Cincinnati & Westwood tied up with its present status. Fifty years ago the Cincinnati & Westwood owned two locomotives, several passenger cars and about a dozen freight cars and did a thriving business hauling people and freight in and out of the Mill Creek Valley in Cincinnati; some years ago passenger service was abandoned and on May 31, 1924, all operation was officially discontinued. Then Mr. Hoffman comes into the picture as the preserver of the franchise of the remnant of the six-mile railroad, for four years piloting a handcar on its daily trip over the line. In Cincinnati they say that until he joined the ranks of the Cincinnati & Westwood, 35 years ago, he had a habit of winning the annual prize on the Cincinnati, Hamilton & Dayton awarded to the section foreman with the best maintained section of line.

What Every Railroad Woman Knows

By Mrs. J. M. Scott *

We knew it when we married him
  Some twenty years ago—
That he would be away a lot,
  In fact, he told us so.
But the real truth we didn't guess,
  Not all . . . or even half—
Sometimes we sigh, sometimes we cry,
  And now and then we laugh.

They have no hours, these railroad men,
  Their work is never done,
They just remember that it's night
  When everyone goes home.
We wives and mothers learn to smile,
  The young as well as old—
And keep the meat from burning up,
  The beans from getting cold.

We go to church and club, alone,
  To pictures, lectures, too,
We rear the children, cook the meals
  And pay the bills when due.
The youngsters get the whooping cough,
  And measles, mumps and 'grippe—
We carry on both day and night,
  And don't give up the ship.

We bid our friends come in to dine,
  P'rhaps eight or ten, some night;
There's biscuit, turkey, frosted cake
  And candles burning bright.
The hour draws nigh; all things are set—
  There goes the telephone!
The message says: "I have to go,
  I simply can't get home."

We ask the neighbors in to play
  A bridge game; without fail
The man back to the office goes
  To catch up with his mail.
We plan a motor party out,
  Or a radio party in—
'Tis all the same—he's down the state
  Nine chances out of ten.

When we've been married fifty years
  And celebrate the day,
I fancy I'll receive a wire,
  And this is what 'twill say:
"Please tell the guests I'm tied up here
  With snow and rain and flood,
Just go on with the party, I
  Would be there if I could."

I envy those whose days are planned,
  And sometimes wish we'd stop
Meeting committees, moving trains,
  And start a barber shop!
Yet, well I know if fortune came
  And a million we were left,
To tour the world and live at ease,
  One man would be bereft.

He'd think of Harry, Tom and Dick,
  Of Bill and Fred and Joe.
And say, "Let's give away the coin
  And stay with the B. & O."
Sometimes I think when the Pale Horse comes
  With Death upon his back,
The Head will moan, "I can't go now,
  There are coal cars off the track."

Postlude

If one should ask of me advice
  As to marrying railroad men,
I'd say, "Look Out! Take care! Beware!"
  (But I'd do the same again!)

—From the Baltimore & Ohio Employees Magazine.

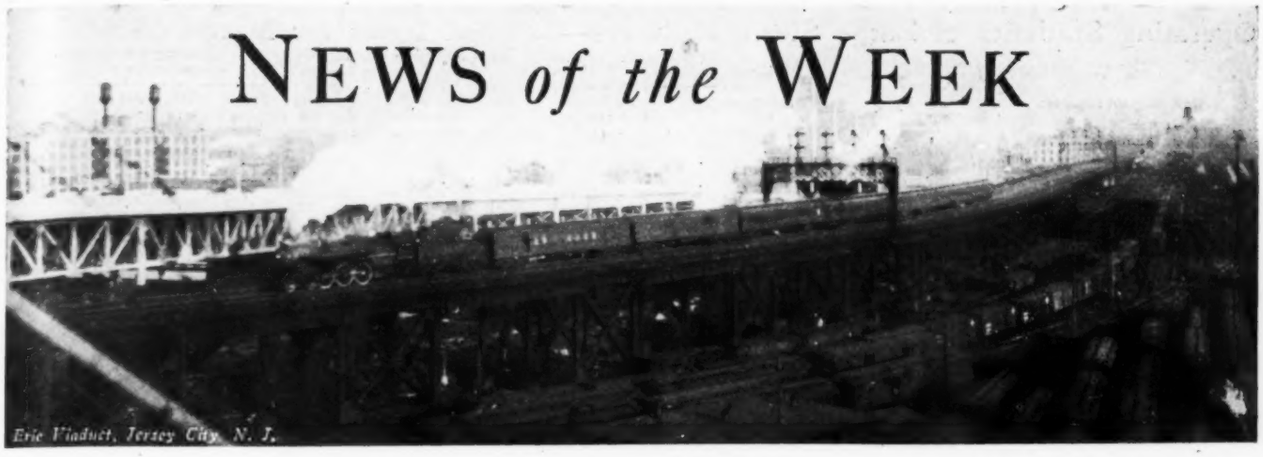
* Wife of General Superintendent, B. & O., Wheeling, W. Va.

Perpetuating a Whistle

In most instances townspeople complain of the noise made by railway shop and locomotive whistles. Not so the enterprising community of Terrell, Tex., on the Texas Midland, recently acquired by the Southern Pacific. They think so much of the old brass whistle at the shops there that they have asked that it be presented to the city, to be mounted in a suitable location, so that it may continue to blow each morning at six o'clock. The secretary of the chamber of commerce, in making the unusual request, waxes quite lyrical, as follows:

"Many of us, relying upon the whistle's regular and vibrant calls, have never owned an alarm clock nor a crowing rooster, for at six o'clock each morning, hot or cold, wet or dry, it has ushered in the business day. Nor has it rudely and hoarsely awakened us from our slumbers with coarse and strident voice, like midnight siren calling firemen to their unhappy task, but with appealing tone and gentle urge has drawn them from the embrace of Morpheus to greet the dawn."

NEWS *of the* WEEK



Erie Viaduct, Jersey City, N. J.

THE FOURTH ANNUAL REUNION of the veterans' association of the Chicago & North Western was held in Chicago on May 15 and 16 with more than 400 employees in attendance.

THE ATLANTIC COAST LINE has issued a 108-page booklet called, "Timely Railroad Topics" which includes the 52 subjects relative to transportation which have appeared in its weekly pamphlets bearing the same title.

W. R. SCOTT of Mathiston, Miss., has been appointed a member of the Mississippi Railroad Commission to fill an unexpired term which ends in January, 1932. Mr. Scott had previously been a member of the commission from 1908 to 1912.

A COMMUNICATION urging support of Secretary Hoover's Presidential candidacy at the May 29 primary in West Virginia was forwarded to the railway labor organizations in that state under the signatures of executives of three railroad brotherhoods and seven allied organizations. The letter was made public in Cleveland by D. B. Robertson, president of the Brotherhood of Locomotive Firemen and Enginemen.

MAJOR R. Y. STUART, chief of the forest service, of the Department of Agriculture, has been appointed vice-chairman of the National Committee on Wood Utilization of the Department of Commerce by Secretary Hoover, to succeed Colonel William B. Greeley, who has been appointed secretary-manager of the West Coast Lumber Manufacturers' Association.

THE BROTHERHOOD of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees meeting in convention at Columbus, Ohio, on May 17, voted to re-affiliate with the American Federation of Labor. The brotherhood was suspended by the federation in 1925 following its refusal to comply with an executive order issued by the federation in a jurisdictional dispute which would have required the brotherhood to exclude from its membership drivers and chauffeurs of the American Railway Express Company. The brotherhood now acts in response to an invitation from the federation to re-affiliate.

Early Argument in O'Fallon Case Asked

The government has filed in the Supreme Court of the United States a motion to advance for early argument in the October term the appeal of the St. Louis & O'Fallon from the decision of the lower federal court in its recapture valuation case. The lower court declined to enjoin the order of the Interstate Commerce Commission.

Wage Statistics for February

The number of railway employees reported by Class 1 railways to the Interstate Commerce Commission as of the middle of February, 1928, was 1,608,371, and their total compensation for the month was $221,813,084. Compared with the returns for the corresponding month of 1927, the number of employees shows a decrease of 112,149, or 6.52 per cent, and the total compensation decreased $6,358,486, or 2.79 per cent.

Standard Time Zones Defined

The Interstate Commerce Commission on May 19 adopted a sixteenth supplemental report on its standard time zone investigation, for the purpose of consolidating in a single document the fifteen supplemental reports and a number of orders that have previously been issued making changes in the original order (October 24, 1918) in which it defined the boundaries between the four time zones of the United States under the provisions of the law passed by Congress in 1918. The present report contains complete definitions, filling nine pages, of the boundaries of the zones as now in effect, including the numerous exceptions where a railroad is authorized to use the time of one zone for a limited distance in the adjacent zone.

W. F. Kiesel, Jr., Honored

William F. Kiesel, Jr., mechanical engineer of the Pennsylvania, was awarded the George R. Henderson Medal by the Franklin Institute in Philadelphia on May 16. The certificate and gold medal were presented to Mr. Kiesel by Henry Howson, Sr., vice-president of the Franklin Institute, in the presence of several hundred specially invited guests. Mr. Kiesel was one of a class of 15 scientists and inventors who received various medals for their scientific achievements.

This was the first award of the George R. Henderson Medal, which was founded in 1924 by Mrs. Virginia P. C. Henderson for "meritorious inventions or discoveries in the field of railway engineering." The award to Mr. Kiesel was on the basis of "his numerous inventions of outstanding value in locomotive and railway car design and construction."

National Railways of Mexico Take Over Interoceanic Railway

On May 1 the National Railways of Mexico resumed the operation of the Interoceanic Railway and it will hereafter, constitute the Jalapa, Oaxaca and Puebla divisions of the National Railways. The Interoceanic is a narrow-gage line forming one of the two principal routes between Mexico City and Vera Cruz. With branches it comprises approximately 1,250 miles of line. Prior to 1913, it was operated as a part of the National Railway system but during the revolutions it, in common with other Mexican roads, was taken over by the government. When the roads were returned to their owners two years ago, a separate organization was created for the Interoceanic. This has now been disbanded. The Interoceanic is controlled by the National Railways under a long term lease.

Medals for Heroism

Upon recommendation of the Interstate Commerce Commission, the President has awarded medals of honor to Charles W. Van Buren of Jackson, Miss., and Miss Jessie Knight of Matton, Ill. These medals have been awarded under the act of February 23, 1905, which provides for bronze medals of honor to be awarded for outstanding feats of bravery in connection with the saving of life upon railroads. Van Buren, stationmaster of the Illinois Central at Jackson, on September 5, 1926, saved from death a little child who ran in front of an approaching passenger train; and he barely escaped fatal injury himself. Miss Knight, on July 27, 1927, at Mattoon, pulled three little children off the track just as they

(Continued on page 1226)

Operating Statistics of Large Steam Railways—Selected Items for March, 1928, Com

Region, road and year	Average miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (thousands)	Car-miles: Per cent loaded	Gross ton-miles (thousands): Gross, Excluding locomotive and tender	Gross ton-miles (thousands): Net, Revenue and non-revenue	Average number of locomotives on line: Serviceable	Unserviceable	Per cent unserviceable	Stored
New England Region:												
Boston & Albany	1928	407	200,054	212,781	21,116	5,207	66.8	262,180	93,213	99	23	18.8	9
	1927	407	226,674	242,252	25,699	5,153	67.0	263,092	96,695	112	15	11.6	9
Boston & Maine	1928	2,074	442,974	571,217	45,646	13,069	68.7	669,203	251,321	256	58	18.5	28
	1927	2,085	506,409	575,460	50,143	12,693	69.6	652,326	250,273	291	73	19.9	27
N. Y., New H. & Hart.	1928	2,130	549,461	605,730	38,362	16,246	66.9	840,204	321,335	324	58	15.2	51
	1927	2,140	585,163	617,935	41,846	16,496	68.4	851,313	339,996	308	65	17.5	21
Great Lakes Region:												
Delaware & Hudson	1928	875	317,166	430,115	50,442	9,618	63.7	578,019	266,715	247	36	12.7	94
	1927	875	360,924	492,194	54,956	10,433	62.7	661,788	319,090	254	29	10.2	86
Del., Lack. & Western	1928	998	556,132	628,530	68,506	17,757	67.0	986,705	401,086	253	57	18.3	16
	1927	999	564,951	643,827	77,108	18,085	67.7	994,685	410,598	268	56	17.2	29
Erie (inc. Chi. & Erie)	1928	2,317	934,078	1,026,158	88,039	39,217	64.5	2,290,798	946,762	419	119	22.2	36
	1927	2,317	1,044,258	1,163,674	116,968	38,048	63.8	2,313,176	1,003,615	516	135	20.8	71
Lehigh Valley	1928	1,345	520,539	569,737	65,918	16,714	64.4	949,972	386,325	360	75	17.3	87
	1927	1,346	588,344	641,249	75,994	18,028	64.2	1,046,152	446,850	366	79	17.8	68
Michigan Central	1928	1,822	628,187	660,025	20,377	21,929	60.3	1,212,035	400,506	202	83	29.0	22
	1927	1,820	589,433	611,223	20,458	21,488	62.9	1,130,577	394,039	242	71	22.6	64
New York Central	1928	6,459	2,114,552	2,374,451	168,686	82,191	61.4	4,951,738	2,051,421	1,058	350	24.9	273
	1927	6,478	2,226,261	2,556,461	169,833	84,834	61.0	5,342,382	2,338,781	1,119	326	22.6	232
New York, Chi. & St. L.	1928	1,665	680,232	688,452	7,337	22,353	62.2	1,268,125	474,409	229	55	19.3	55
	1927	1,665	675,104	681,360	7,943	21,799	65.1	1,197,275	463,354	230	54	19.0	50
Pere Marquette	1928	2,181	435,408	440,533	5,237	11,810	61.9	690,316	282,870	181	39	17.7	28
	1927	2,180	465,587	475,889	8,078	12,196	61.1	725,025	298,563	189	35	15.5	22
Pitts. & Lake Erie	1928	231	126,348	128,472	1,459	4,363	59.4	364,203	201,707	53	18	25.1	9
	1927	231	140,307	142,659	2,579	5,189	59.8	413,636	232,586	50	19	27.1	5
Wabash	1928	2,497	847,524	895,206	13,752	26,475	63.4	1,496,169	542,032	308	64	17.2	44
	1927	2,497	830,283	865,853	13,412	25,342	63.4	1,444,890	539,435	327	49	13.1	47
Central Eastern Region:												
Baltimore & Ohio	1928	5,534	1,920,550	2,270,434	177,212	56,812	61.5	3,710,563	1,706,398	1,011	254	20.1	119
	1927	5,541	2,164,435	2,553,916	214,574	63,588	61.6	4,273,939	2,072,369	1,051	223	17.5	60
Central of New Jersey	1928	691	266,019	287,147	47,697	7,768	58.4	516,037	242,016	182	35	16.3	45
	1927	691	268,023	289,447	51,563	7,901	59.2	524,400	250,873	186	40	17.6	14
Chicago & Eastern Ill.	1928	945	274,086	275,757	3,481	7,290	61.9	460,002	208,311	105	51	32.7	27
	1927	945	326,043	333,084	4,898	8,451	62.3	542,416	258,486	110	46	29.6	11
Clev., Cin., Chi. & St. L.	1928	2,370	785,703	814,352	16,874	24,555	61.6	1,582,650	723,388	325	111	25.4	33
	1927	2,374	833,895	875,468	28,464	26,520	61.9	1,758,214	837,000	341	91	21.0	14
Elgin, Joliet & Eastern	1928	461	154,288	164,076	7,991	4,515	62.4	342,674	172,928	77	13	14.3	...
	1927	461	159,549	168,655	7,693	4,586	61.3	361,491	189,634	80	11	12.2	..
Long Island	1928	396	52,164	63,374	11,443	651	54.6	47,752	15,650	48	8	14.2	...
	1927	393	48,530	53,027	14,974	660	55.3	43,147	16,307	43	8	15.3	..
Pennsylvania System	1928	10,851	3,974,187	4,509,044	386,916	135,254	64.0	8,662,142	3,919,758	2,810	413	12.8	802
	1927	10,843	4,863,963	5,354,521	415,457	146,288	63.2	9,748,120	4,581,584	2,862	429	13.0	507
Reading	1928	1,129	593,184	642,926	61,774	16,129	59.1	1,130,650	551,588	321	74	18.7	59
	1927	1,130	689,107	749,208	76,295	18,333	58.1	1,322,178	663,717	319	73	18.6	19
Pocahontas Region:												
Chesapeake & Ohio	1928	2,717	1,141,173	1,234,467	49,466	36,883	55.8	2,957,555	1,566,923	552	92	14.2	74
	1927	2,651	1,250,342	1,354,985	52,320	41,676	56.2	3,359,321	1,815,384	551	90	14.0	34
Norfolk & Western	1928	2,231	801,699	968,546	34,472	29,134	60.6	2,328,330	1,238,016	521	58	10.1	132
	1927	2,232	887,878	1,073,267	35,848	30,649	59.7	2,560,720	1,399,722	545	58	9.7	124
Southern Region:												
Atlantic Coast Line	1928	5,105	762,879	767,578	11,540	19,882	60.4	1,120,800	420,601	405	56	12.1	86
	1927	5,011	852,986	859,285	13,979	22,552	59.9	1,275,268	473,534	416	56	11.9	53
Central of Georgia	1928	1,898	297,286	298,955	6,320	7,675	72.1	407,473	173,671	135	24	15.2	11
	1927	1,898	316,919	321,170	6,985	8,098	71.0	436,008	189,794	139	24	14.8	11
Ill. Cent. (inc. Y. & M. V.)	1928	6,595	2,096,612	2,111,637	51,081	58,128	62.7	3,817,522	1,648,586	767	107	12.3	28
	1927	6,554	2,075,781	2,082,353	48,691	57,377	62.7	3,730,972	1,631,271	802	93	10.4	23
Louisville & Nashville	1928	5,061	1,739,597	1,810,911	61,739	36,354	60.0	2,474,755	1,182,015	614	104	14.5	29
	1927	5,044	1,810,026	1,884,439	61,764	37,223	60.7	2,543,262	1,235,698	599	113	15.9	2
Seaboard Air Line	1928	4,484	595,614	614,030	9,960	15,893	65.2	893,036	350,103	266	61	18.7	5
	1927	4,237	648,153	661,672	11,362	16,335	63.4	947,918	376,802	263	50	15.8	...
Southern	1928	6,720	1,490,732	1,522,213	32,332	38,822	66.7	2,133,103	876,100	820	111	11.9	80
	1927	6,718	1,682,493	1,716,675	38,207	40,763	65.3	2,299,948	953,205	839	124	12.9	16
Northwestern Region:												
Chi. & North Western	1928	8,463	1,555,020	1,623,883	28,133	38,592	62.5	2,279,945	885,438	804	130	13.9	119
	1927	8,463	1,450,164	1,501,868	22,629	36,011	65.0	2,036,672	830,077	754	150	16.6	117
Chi., Milw., St. P. & Pac.	1928	11,247	1,713,677	1,838,561	117,645	51,558	63.2	3,034,381	1,266,776	826	148	15.2	178
	1927	11,198	1,606,844	1,707,003	98,911	47,514	65.4	2,713,038	1,161,853	791	193	19.6	161
Chi., St. P., Minn. & Om.	1928	1,724	326,521	347,114	15,274	6,995	66.8	387,246	161,745	155	28	15.5	22
	1927	1,724	305,469	323,894	14,176	6,413	68.9	340,290	140,712	153	36	18.8	2
Great Northern	1928	8,163	768,075	794,885	47,292	27,921	69.9	1,561,919	694,594	554	114	17.0	127
	1927	8,164	732,515	758,316	44,079	25,225	68.3	1,402,686	624,630	555	163	22.7	144
Minn., St. P. & S. Ste. M.	1928	4,358	528,591	544,738	5,684	13,763	67.7	736,671	318,598	232	32	12.0	19
	1927	4,368	512,459	524,417	4,626	12,895	68.3	682,689	298,441	295	33	10.2	33
Northern Pacific	1928	6,413	819,745	874,533	52,765	28,792	71.0	1,593,808	706,078	448	131	22.6	64
	1927	6,498	759,739	805,048	45,745	25,486	71.5	1,365,156	604,179	485	154	24.1	109
Oreg.-Wash. R. R. & Nav.	1928	2,246	199,245	212,855	18,559	6,196	71.3	349,801	156,875	132	17	11.1	7
	1927	2,164	187,388	198,633	16,045	5,692	72.8	315,533	141,649	137	22	13.6	15
Central Western Region:												
Atch., Top. & S. Fe (including P. & S. F.)	1928	10,389	1,542,874	1,667,746	88,683	51,144	66.4	2,958,337	1,109,403	777	146	15.8	223
	1927	10,377	1,686,613	1,815,179	98,219	53,627	66.5	3,117,237	1,209,174	750	167	18.2	132
Chicago & Alton	1928	1,000	315,498	340,086	3,260	7,767	60.7	487,980	207,816	124	26	17.3	21
	1927	1,022	324,279	350,072	5,339	7,681	58.3	503,477	216,822	142	18	11.5	29
Chi., Burl. & Quincy	1928	9,320	1,641,610	1,692,861	62,607	54,554	63.0	3,267,671	1,503,472	748	167	18.2	55
	1927	9,336	1,624,977	1,683,101	59,250	49,993	61.7	3,050,503	1,398,460	722	254	26.0	37
Chi., Rock I. & Pacific	1928	7,569	1,443,305	1,508,082	14,186	37,607	62.3	2,176,764	830,863	594	98	14.2	111
	1927	7,562	1,480,321	1,528,038	17,352	36,741	60.7	2,140,141	792,615	556	121	17.9	43
Denver & R. G. Wn.	1928	2,547	206,554	238,192	39,690	6,553	69.8	383,372	179,733	222	49	18.1	54
	1927	2,536	214,406	254,059	45,035	6,235	70.3	362,508	172,406	220	47	17.6	51
Oregon Short Line	1928	2,539	311,697	338,770	34,336	9,511	69.5	558,821	243,066	168	24	12.3	29
	1927	2,537	269,692	291,991	29,181	8,273	72.7	471,471	211,693	184	24	11.4	53
So. Pacific—Pacific Lines	1928	8,746	1,512,260	1,644,464	211,280	48,407	66.1	2,848,797	1,085,787	688	243	26.1	93
	1927	8,723	1,487,381	1,619,162	220,872	46,334	64.2	2,810,925	1,073,087	684	250	26.7	85
Union Pacific	1928	3,712	949,366	971,344	37,956	37,379	70.0	2,022,028	780,545	420	54	11.4	148
	1927	3,714	800,296	827,556	41,757	32,616	76.3	1,658,949	683,033	469	45	8.7	207
Southwestern Region:												
Gulf, Colo. & S. Fe	1928	1,933	244,156	251,830	8,882	8,016	66.6	480,150	215,419	141	21	12.8	48
	1927	1,933	430,384	456,330	11,635	12,225	58.5	811,731	353,840	143	31	18.0	3
Mo.-Kans.-Tex. Lines	1928	3,176	415,832	418,802	10,110	14,169	60.3	835,576	316,256	193	35	15.3	82
	1927	3,176	464,304	470,185	9,730	15,381	61.2	899,345	344,809	219	38	14.9	88
Missouri Pacific	1928	7,369	1,414,373	1,457,540	45,787	42,365	64.2	2,517,916	1,039,651	557	84	13.1	45
	1927	7,317	1,360,186	1,395,870	48,325	40,377	64.6	2,374,229	1,002,895	539	81	13.1	5
St. Louis-San Francisco	1928	4,982	792,451	806,702	9,250	19,445	62.7	1,137,001	464,168	386	63	13.9	57
	1927	4,860	787,669	802,638	9,892	19,503	63.7	1,141,106	472,652	424	62	12.7	90
Texas & New Orleans	1928	4,582	803,675	805,451	2,340	17,778	64.7	1,037,818	405,260	267	61	18.6	34
	1927	4,550	733,607	735,839	2,073	16,365	66.2	946,355	388,851	255	59	18.8	34
Texas & Pacific	1928	2,015	531,561	531,561	5,959	14,119	60.0	900,743	353,343	200	27	11.8	19
	1927	1,954	394,857	394,917	1,128	10,703	61.4	644,329	236,987	157	32	16.9	18

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

pared with March, 1927, for Roads with Annual Operating Revenues above $25,000,000.

Region, road and year	Average number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotive and tender	Gross tons per train, excluding locomotive and tender	Net tons per train	Net tons per loaded car	Net ton-miles per car-day	Car miles per car-day	Net-ton miles per mile of road per day	Pounds of coal per 1,000 gross ton-mile including locomotive and tender	Locomotive miles per locomotive day
New England Region.													
Boston & Albany.....1928	3,517	4,671	8,188	8.3	17,918	1,310	466	17.9	367	30.7	7,387	181	62.0
1927	2,814	5,418	8,232	2.7	15,703	1,161	427	18.8	379	30.1	7,663	190	68.0
Boston & Maine.....1928	12,148	10,553	22,701	4.7	17,313	1,511	567	19.2	357	27.0	3,909	130	63.3
1927	13,300	11,986	25,286	6.1	14,776	1,288	494	19.7	319	23.3	3,872	134	55.5
N. Y., New H. & Hart..1928	17,328	16,445	33,773	9.3	20,153	1,529	585	19.8	307	23.2	4,866	125	54.3
1927	22,002	19,353	41,355	17.9	18,350	1,455	581	20.6	265	18.8	5,125	129	57.1
Great Lakes Region:													
Delaware & Hudson.....1928	10,911	5,578	16,489	3.5	21,679	1,822	841	27.7	522	29.5	9,833	157	54.7
1927	10,693	6,531	17,224	3.4	21,528	1,834	884	30.6	598	31.2	11,761	157	62.4
Del., Lack. & Western...1928	17,915	7,119	25,034	4.4	22,344	1,774	721	22.6	517	34.1	12,964	149	72.7
1927	17,477	7,678	25,155	3.7	22,016	1,761	727	22.7	527	34.3	13,255	145	71.9
Erie (inc. Chi. & Erie)..1928	32,199	18,324	50,523	5.6	29,919	2,452	1,014	24.1	604	38.8	13,182	128	66.8
1927	34,437	22,189	56,626	7.8	25,328	2,215	961	26.4	572	34.0	13,971	132	63.5
Lehigh Valley 1928	24,085	8,365	32,450	7.6	25,346	1,825	742	23.1	384	25.8	9,262	164	47.1
1927	23,520	9,071	32,591	8.7	24,913	1,778	760	24.8	442	27.8	10,712	156	52.0
Michigan Central 1928	18,845	15,390	34,235	4.7	30,540	1,929	638	18.3	377	34.3	7,091	120	77.1
1927	16,926	18,156	35,082	3.7	28,531	1,918	668	18.3	362	31.4	6,985	125	65.2
New York Central.....1928	74,198	65,741	139,939	5.1	30,792	2,342	970	25.0	473	30.9	10,245	117	58.2
1927	70,483	70,856	141,339	3.4	29,114	2,400	1,051	27.6	534	31.7	11,646	114	60.9
New York, Chi. & St. L..1928	14,441	10,596	25,037	6.5	25,627	1,864	697	21.2	611	46.3	9,193	115	79.2
1927	13,431	10,316	23,747	5.4	24,145	1,773	686	21.3	629	45.5	8,977	114	78.3
Pere Marquette.....1928	10,125	7,857	17,982	4.3	20,341	1,585	650	24.0	507	34.2	4,184	111	65.3
1927	10,556	9,033	19,589	3.7	19,098	1,557	641	24.5	492	32.9	4,418	112	69.9
Pitts. & Lake Erie.....1928	17,641	6,376	24,017	3.7	32,942	2,883	1,596	46.2	271	9.9	28,135	123	58.8
1927	13,720	8,817	22,537	4.7	30,806	2,948	1,658	44.8	333	12.4	32,415	107	67.8
Wabash 1928	15,690	11,348	27,038	3.2	28,240	1,765	640	20.5	647	49.9	7,002	131	78.7
1927	14,494	12,889	27,383	2.5	26,312	1,740	650	21.3	635	47.1	6,969	133	75.4
Central Eastern Region:													
Baltimore & Ohio.....1928	76,285	28,660	104,945	4.7	22,199	1,932	888	30.0	525	28.4	9,946	157	62.4
1927	70,690	34,819	105,509	4.3	20,629	1,975	957	32.6	634	31.6	12,064	163	70.1
Central of New Jersey...1928	19,384	10,105	29,489	6.5	21,555	1,940	910	31.2	265	14.5	11,298	150	49.7
1927	18,858	11,906	30,764	5.1	18,631	1,957	936	31.8	263	14.0	11,713	161	48.8
Chicago & Eastern Ill...1928	12,778	3,765	16,543	30.4	23,510	1,678	760	28.6	406	23.0	7,110	141	57.8
1927	12,938	5,039	17,977	23.3	22,051	1,664	793	30.6	464	24.3	8,822	145	69.9
Clev., Cin., Chi. & St. L.1928	23,068	20,018	43,086	3.6	27,044	2,014	921	29.5	542	29.8	9,844	125	61.5
1927	17,761	21,038	38,799	5.0	26,757	2,108	1,004	31.6	696	35.6	11,374	122	67.6
Elgin, Joliet & Eastern...1928	9,443	7,867	17,310	4.4	15,282	2,221	1,121	38.3	322	13.5	12,112	138	61.7
1927	8,996	8,180	17,176	4.3	14,584	2,266	1,189	41.3	356	14.1	13,282	138	62.5
Long Island 1928	1,662	4,162	5,824	1.6	5,426	915	300	24.0	87	6.6	1,276	294	43.4
1927	1,758	5,329	7,087	1.3	4,792	889	336	24.7	74	5.4	1,338	337	43.7
Pennsylvania System 1928	223,300	72,602	295,902	6.2	25,265	2,180	986	29.0	427	23.0	11,652	137	49.0
1927	214,393	78,260	292,653	4.7	22,127	2,004	942	31.3	505	25.5	13,630	132	56.6
Reading 1928	30,211	11,310	41,521	4.2	21,740	1,906	930	34.2	429	21.2	15,762	162	57.5
1927	27,352	15,254	42,606	2.8	21,294	1,919	963	36.2	503	23.9	18,949	153	67.9
Pocahontas Region:													
Chesapeake & Ohio.....1928	33,560	7,860	41,420	2.7	32,156	2,592	1,374	42.5	1,220	51.5	18,606	99	64.4
1927	29,375	11,663	41,038	3.2	30,137	2,687	1,452	43.6	1,427	58.3	22,091	101	70.8
Norfolk & Western.....1928	31,229	7,171	38,400	1.0	38,900	2,904	1,544	42.5	1,040	40.4	17,897	140	55.8
1927	28,775	8,243	37,018	1.4	37,946	2,884	1,576	45.7	1,220	44.7	20,233	142	59.3
Southern Region:													
Atlantic Coast Line.....1928	23,398	11,188	34,586	6.1	19,317	1,469	551	21.2	392	30.7	2,658	112	54.5
1927	23,401	13,097	36,498	3.2	19,034	1,495	555	21.0	419	33.3	3,048	118	59.6
Central of Georgia.....1928	5,448	6,254	11,702	4.5	18,405	1,371	584	22.6	479	29.4	2,952	141	61.9
1927	5,253	6,753	12,006	3.1	18,714	1,376	599	23.4	510	30.6	3,226	140	64.9
Ill. C. (inc. Y. & M. V.).1928	43,309	20,429	63,738	7.1	24,567	1,821	786	28.4	834	46.9	8,064	134	79.9
1927	42,432	25,166	67,598	5.2	23,274	1,797	786	28.4	778	43.7	8,029	134	76.8
Louisville & Nashville...1928	44,558	17,317	61,875	8.6	17,560	1,423	679	32.5	616	31.6	7,534	160	84.2
1927	44,918	18,122	63,040	8.6	16,212	1,405	683	33.2	632	31.4	7,903	163	88.1
Seaboard Air Line.....1928	15,834	10,845	26,679	5.5	18,039	1,499	588	22.0	423	29.5	2,519	141	61.6
1927	15,689	11,437	27,126	3.9	16,778	1,462	581	23.1	448	30.6	2,869	142	69.4
Southern 1928	45,109	20,905	66,014	6.8	18,430	1,431	588	22.6	428	28.4	4,205	164	53.8
1927	45,060	21,189	66,249	4.8	17,863	1,367	567	23.4	464	30.4	4,577	164	58.8
Northwestern Region:													
Chi. & North Western...1928	45,906	27,257	73,163	7.0	18,969	1,466	569	23.0	390	27.3	3,375	142	57.1
1927	49,768	27,978	77,746	6.3	17,524	1,404	572	23.0	344	23.0	3,164	143	54.4
Chi., Mil., St. P. & Pac..1928	48,379	21,840	70,219	3.2	22,563	1,771	739	24.6	582	37.5	3,633	137	64.8
1927	53,839	21,663	75,502	5.2	21,260	1,688	723	24.5	496	31.1	3,347	143	59.2
Chi., St. P., Minn. & Om.1928	2,355	8,856	11,211	8.1	14,927	1,186	495	23.1	465	30.1	3,027	133	63.9
1927	3,168	8,274	11,442	11.9	13,567	1,114	461	21.9	397	26.2	2,634	137	57.9
Great Northern 1928	40,413	9,513	49,926	6.4	23,753	2,034	904	24.9	449	25.8	2,745	140	40.7
1927	41,198	9,378	50,576	6.4	22,048	1,915	853	24.8	398	23.5	2,468	146	36.1
Minn., St. P. & S. Ste. M..1928	19,481	5,781	25,262	5.2	16,308	1,394	603	23.1	407	26.0	2,358	115	67.3
1927	19,458	5,728	25,186	3.5	15,361	1,332	582	23.1	382	24.2	2,204	118	52.0
Northern Pacific 1928	37,104	6,967	44,071	7.9	24,885	1,944	861	24.5	517	29.7	3,551	154	51.7
1927	37,283	7,368	44,651	7.3	22,823	1,797	795	23.7	436	25.8	2,999	147	42.9
Oreg.-Wash. R. R. & Nav.1928	7,704	3,966	11,670	6.6	21,109	1,756	787	25.3	434	24.0	2,254	173	50.4
1927	7,323	3,719	11,042	4.5	20,272	1,684	756	24.9	414	22.8	2,111	184	43.8
Central Western Region:													
Atch., Top. & S. Fe (in-1928	58,131	14,964	73,095	6.0	28,449	1,917	719	21.7	490	34.0	3,445	116	61.4
cluding P. & S. F.)...1927	57,293	18,248	75,541	6.2	26,097	1,848	717	22.5	516	34.4	3,759	121	67.3
Chicago & Alton.....1928	10,485	4,369	14,854	3.7	23,089	1,547	659	26.8	451	27.8	6,705	127	73.8
1927	10,101	5,582	15,683	3.4	19,231	1,553	669	28.2	446	27.1	6,844	149	71.6
Chi., Burl. & Quincy....1928	46,921	20,234	67,155	4.4	26,040	1,991	916	27.6	722	41.6	5,204	128	61.9
1927	49,244	18,725	67,969	3.9	24,469	1,877	861	28.0	664	38.5	4,832	137	57.6
Chi., Rock I. & Pacific..1928	31,269	17,779	49,048	6.9	20,492	1,508	576	22.1	546	39.7	3,541	144	70.9
1927	32,780	21,622	54,402	7.4	18,111	1,446	535	21.6	470	35.9	3,381	153	73.7
Denver & R. G. Wn....1928	12,057	3,207	15,264	3.3	20,255	1,856	870	27.4	380	19.8	2,276	181	33.1
1927	11,644	3,200	14,844	2.3	17,376	1,691	804	27.7	375	19.3	2,193	194	36.1
Oregon Short Line.....1928	9,601	5,588	15,189	3.1	24,430	1,793	780	25.6	516	29.1	3,088	122	62.8
1927	7,822	6,120	13,942	3.6	23,866	1,748	785	25.6	490	26.3	2,692	129	50.0
Southern Pac.--Pac. Lines.1928	37,919	25,561	63,480	5.8	24,593	1,884	718	22.4	552	37.2	4,005	121	64.3
1927	34,438	25,945	60,383	5.3	23,440	1,890	721	23.2	573	38.5	3,968	127	63.6
Union Pacific 1928	20,707	9,341	30,048	11.3	35,627	2,130	822	20.9	838	57.3	6,784	111	68.6
1927	22,109	8,647	30,756	13.4	33,545	2,073	853	20.9	716	44.8	5,932	114	54.6
Southwestern Region:													
Gulf, Colo. & S. Fe.....1928	10,860	3,695	14,555	2.7	27,991	1,967	882	26.9	477	26.7	3,595	102	52.0
1927	9,970	7,729	17,699	3.0	24,448	1,886	822	28.9	645	38.1	5,905	113	86.9
M.-Kans.-Tex. Lines.....1928	16,968	6,578	23,546	6.4	28,092	2,009	761	22.3	433	32.2	3,212	101	60.7
1927	15,605	6,801	22,406	6.6	26,038	1,937	743	22.4	496	36.2	3,502	107	60.2
Missouri Pacific 1928	29,161	19,673	48,834	5.3	24,623	1,780	735	24.5	687	43.6	4,551	127	75.6
1927	27,241	19,081	46,322	4.7	22,528	1,746	737	24.8	698	43.5	4,421	128	75.2
St. Louis-San Francisco..1928	22,680	8,283	30,963	3.6	19,133	1,435	586	23.9	484	32.3	3,005	157	58.7
1927	20,973	10,330	31,303	3.7	18,677	1,449	600	24.2	487	31.6	3,137	162	53.9
Texas & New Orleans...1928	12,264	14,693	26,957	5.5	18,815	1,291	504	22.8	485	32.9	2,853	103	79.5
1927	11,837	15,058	26,895	5.4	18,028	1,290	530	23.8	466	29.6	2,757	109	75.8
Texas & Pacific.....1928	6,553	10,773	17,326	4.2	19,952	1,695	665	25.0	658	43.8	5,657	109	76.5
1927	6,371	6,872	13,243	6.9	21,720	1,632	600	22.1	577	42.4	3,912	113	67.7

News of the Week

(*Continued from page 1223*)

were about to be struck by an approaching locomotive, the children having not been seen by either the engineman or the fireman. Miss Knight's is the 29th medal issued under the law of 1905.

U. M. W. Withdraws Charge Against P. R. R.

C. B. Heiserman, vice-president and general counsel of the Pennsylvania, in conducting the examination of C. D. Young, general purchasing agent of the company, in his testimony before the Senate Committee on Interstate Commerce in its investigation of the coal situation, on May 16, called attention to a charge made some time ago by the United Mine Workers of America against the Pennsylvania Railroad. This charge was to the effect that the Pennsylvania is standing 60 per cent of any losses which may accrue to a certain coal company whose mine, near Shadyside, O., is now being operated as a non-union enterprise.

Judge Heiserman, addressing the Senate Committee, insisted that the United Mine Workers either produce witnesses to substantiate this charge or withdraw it from the record.

President Lewis, of the United Mine Workers, after consulting with his associates in attendance at the hearing, stated to the Senate Committee that the charge was withdrawn.

Report of Director General of Railroads

The President has transmitted to Congress the annual report of A. W. Mellon as director general of railroads for the year 1927 which is summarized as follows:

Three thousand one hundred and eighty-six suits in which the Director General was interested, involving the sum of $8,560,069 were finally disposed of at a cost of $433,841 during the calendar year 1927; definitive obligations of carriers to the Director General in the aggregate amount of $91,761,291 were liquidated; the operating expenses of the Railroad Administration were reduced by the sum of $256,908 (a reduction of 55 per cent as compared with the year 1926); the number of employees was decreased from 100 to 34; and there was turned over to the General Supply Committee surplus furniture and equipment amounting to $58,235.

This leaves a balance on hand of securities of railroads held by the director general amounting to only $21,555,837.

Radio Helps Railroad

Railroad messages were sent by radio for a whole day between Altoona, Pa., and Harrisburg, at the time of the severe snowstorm which began in that region on April 27. The wires of the Pennsylvania were seriously disabled by that storm, and the whole of the Middle division, 131 miles long, was practically isolated from the rest of the system as far as wire communication was concerned. Messages had to be sent by train, with the resultant delay, although round-about wire routes were established within a short time.

The road took advantage of the offer of C. O. Amos and W. K. Augenbach, of Altoona, operators of amateur radio stations, and at 11:30 p. m. on the 27th, a message sent out from Altoona was picked up by P. H. Cassidy of Swatara, Pa., who at once repeated it by wire to officers of the road at Harrisburg. At Harrisburg, Lewis E. Ellicker, employed in the station master's office, who operates amateur station 3-ADE kept up continuous operation for 12 hours with station 8-AKI owned by Mr. Augenbach at Altoona; and then for four hours longer with Mr. Amos' station. The radio station conducted by the Pennsylvania State College (on the Bald Eagle Valley branch) also rendered the railroad company valuable aid for 48 hours.

B. & O. to Celebrate Opening of New Yards

The two new Boston yards of the Boston & Maine in the Somerville and East Cambridge areas, into which have thoroughly modernized during the past 15 months of construction, will be formally opened on June 5 with dedication exercises at which public officers will join with representative shippers and with officers of other railroads, as guests of President George Hannauer. There will be a luncheon in pavilion tents pitched on the top of Asylum Hill, from which practically all activities in the Boston & Maine's entire Boston terminal area can be seen.

The program will include close-up working demonstration of the several details of the car retarder system, with electro pneumatic retarders and switches, loud speakers, teletype machines, pneumatic tubes and flood lights, with which both the inbound and outbound yards are equipped. The brief speaking program, over which Vice-President N. W. Hawkes will preside, will include official greetings which Governor Alvan T. Fuller has been invited to extend, remarks on behalf of the shippers of New England by W. F. Garcelon, general chairman of the New England Shippers Advisory Board, and a short address by President Hannauer.

Freight Container Bureau

The Freight Container Bureau, American Railway Association, 30 Vesey street, New York City, has issued its report for the year ending December 31, 1927. It is a 40-page pamphlet consisting mainly of the report of the chief engineer, Edward Dahill. Mr. Dahill and his eight subordinate engineers devote their time to the improvement of crates, boxes, barrels and other packages, co-operating actively with the Freight claim division of the American Railway Association and also with associations of manufacturers in a dozen different lines. The summary of their work during the 12 months of 1927, shows conferences with 40 manufacturers, several hundred shippers and numerous other persons and organizations; 1500 inspections of commodities, containers, etc., in railway stations, in shippers' warehouses and other places, and 700 examinations of carloads of freight, mostly perishable.

The reports of this Bureau on design of crates, barrels, etc., have been noted in the *Railway Age* from time to time. The bureau is now engaged in the study of the construction of trunks, from the standpoint of the baggage department, and expects to establish a standard. About $3,500 has been expended on this study.

The bureau is availed of by large numbers of shippers and others seeking information in its field, and the engineers have given many lectures. One engineer spent 24 weeks in Florida, North Carolina, Georgia, Tennessee, Idaho and Colorado. One of the engineers has made a circular slide-rule for use in quickly computing the requisite size of skids for use in shipping machines of different weights.

The program for the coming year deals mainly with studies and tests looking to the preparation of standard specifications for baskets, crates and hampers for fresh fruits and vegetables; similar studies for furniture, glassware and crockery, newsprint paper and other commodities, and varied educational work.

A Railroad Newspaper

The Pennsylvania News, published by the Pennsylvania Railroad for the benefit of its 200,000 employees and issued on the first and fifteenth of each month, is a journal published definitely for current news, and is printed on newsprint paper. The characteristics of this publication, as contrasted with the monthly magazine—which is the style generally used by railroads—were described by Walton M. Wentz, the editor of the Eastern edition, in an address recently delivered before the annual meeting of the American Railway Magazine Editors' Association, at Columbia, Mo.

Mr. Wentz calls the paper the largest industrial newspaper in the world. It is now in its sixth year and it has fully justified itself. It is largely filled with items of a personal nature which are considered the best material for creating and sustaining the interest of the reader. Because of this local character, three separate editions are issued, for the three different regions of the company's lines; one from Philadelphia, one from Pittsburgh and one from Chicago. The paper is published promptly and much of the news is of the same character as would be prepared for a daily paper, and every employee can be certain of receiving his copy in the forenoon of the first and the fifteenth—with much news only one day old. Promotions among the officers of the road constitute a department of news which is of special interest, and large numbers of readers are looking for the paper the moment it is due.

Though the local news is thus a main element of the paper, the front page is regularly filled with items of general interest. The page is only half the size of the regular newspaper, but it is gen-

erally found possible to put into this page matter which will be of special interest to from six to a dozen different departments.

The recent action of the directors of the Pennsylvania in increasing the capital stock of the company and setting aside 17½ millions of new stock for sale to employees, was made known in full detail to the employees as soon as they could get it from the daily newspapers, or sooner. Mr. Wentz estimates the cost of the paper per employee per year at fifty cents, not considering any possible allowance for revenue derived from advertising.

Big Exhibit at Atlantic City

To house the great railroad exhibit that will be held at Atlantic City, June 20-27, inclusive, in connection with the meetings of the Mechanical Division, the Purchases and Stores Division and the Motor Transport Division of the American Railway Association, an auxiliary building, to be known as Marine Hall, has been constructed adjacent to the Million Dollar Pier. It is located between the Boardwalk and the ocean, as shown in the photograph, and is connected with the Million Dollar Pier, which appears in the background. The building has been erected on substantial piling, heavily reinforced, and is of steel construction. It measures 500 ft. by 117 ft. and eliminating the aisle space, provides an exhibit space of 47,215 sq. ft. This, added to the exhibit space on the Million Dollar Pier of 94,868 sq. ft., provides a total exhibit space of 142,083 sq. ft.

The people of Atlantic City had hoped to have the new Convention Hall ready for the conventions this year; it will be so arranged as to house both the technical meetings and the exhibits. Unfortunately it could not be completed in time and the city voluntarily erected Marine Hall for the exclusive use of the A. R. A. meetings. The building will be removed from the beach after the conventions.

The chairman of the exhibit committee of the Railway Supply Manufacturers' Association, S. G. Down, of the Westinghouse Air Brake Company, reports that all of the space on the Million Dollar Pier has been assigned. This is true, also, of the larger part of the space in Marine Hall and at the rate that it is being assigned, it will be entirely taken before the conventions open.

Another improvement in the exhibits this year will be the more conveniently located and the larger amount of space for the track exhibit. This will be at the Philadelphia & Reading Terminal, only a short distance from the Million Dollar Pier. Assignments for more than double the usual number of track exhibits have already been made.

Pennsylvania Electrification Program

Electric service on the Pennsylvania from Philadelphia, Pa., through Chester to Wilmington, Del., will probably be completely inaugurated about the first of October, according to a statement made by J. W. Roberts, general superintendent of transportation, Pennsylvania, before the Kiwanis Club of Chester, Pa., at a luncheon on May 16. Mr. Roberts said that the work of electrifying this division is now about 95 per cent completed, in so far as the total volume of work is concerned. The substations and power transmission and feed lines are practically finished, the principal work remaining being that of track bonding. The present plan, Mr. Roberts said, is to change over from steam to electric operation gradually by placing a few electric trains in operation during the summer and gradually increasing the number until tests show that all apparatus is in proper working order.

The electrification through Chester and Wilmington will add 27½ route miles and 100 track miles to this type of traction on the P. R. R., while that of the West Chester branch will add 25 route miles and 44 track miles. With these completed, the Pennsylvania will have about one-fifth of the electrified route mileage and about one-fourth of the electrified track mileage in the United States. Mr. Roberts also said that the work now being done was a part of a plan in which the Pennsylvania would ultimately be electrified all the way from New York, N. Y., to Washington, D. C. This statement he modified by saying that this would be a gradual development depending upon the growth of traffic demands and one which would require some years for consummation.

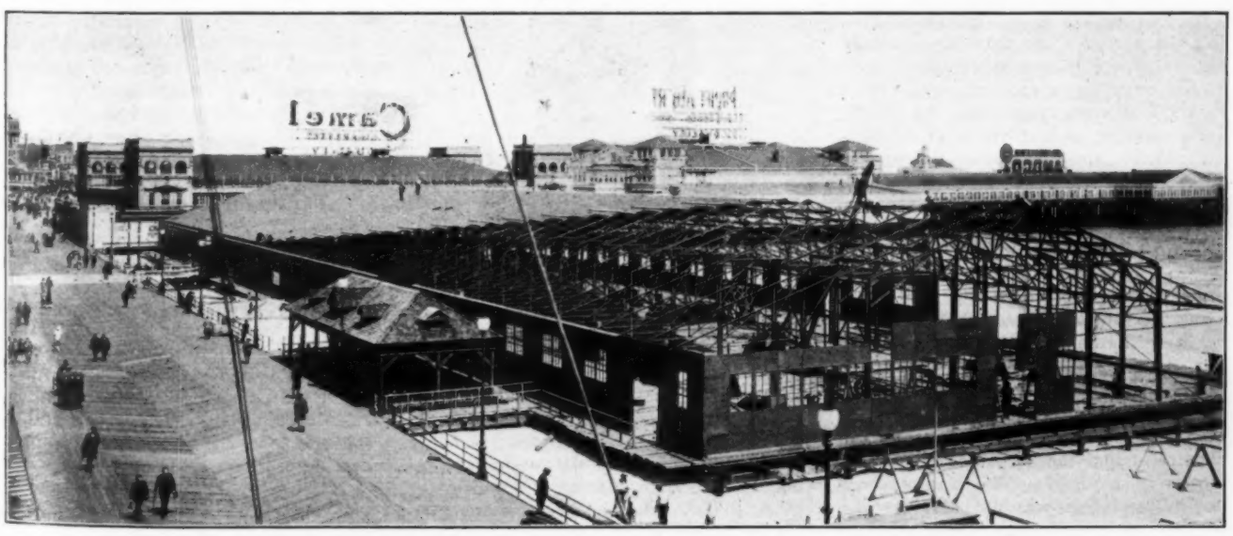
Depreciation Accounting in Canada

The Railway Committee of the House of Commons at Ottawa in a discussion of comparative accounting methods in Canada and the United States, brought out some differences in practice. Joseph H. Harris, a Toronto Conservative member, in examining T. H. Cooper of the accounting department of the Canadian National, brought out that this road did not accrue depreciation on either road or equipment. The witness testified as to the wide diversity in the rates of depreciation used for equipment in the United States, the establishment of some rate being mandatory. He stated that the rate varied from 1½ per cent to 6 per cent, whereas the practice in Canada is to write off the cost when the equipment is actually retired.

Harry H. Stevens, a Vancouver Conservative member, examined President Sir Henry Thornton of the Canadian National on the same subject, inquiring whether the C. N. R.'s account of road and equipment reflects "accurate and reasonable value of the actual assets."

On the statement by Mr. Stevens that there had never been any valuation of the C. N. R., Minister of Railways Dunning said:

"Not a valuation, which could only have been established through a receivership in the first place. There is one accurate way of determining the value of a property which is bankrupt, as these companies were; and that is, by going through a re-



The Erection of Marine Hall, Which is Connected to the Million Dollar Pier at Atlantic City, Will Make Available 142,083 sq. ft. of Exhibit Space for the Railroad Conventions

ceivership, and ascertaining the value by competition in the purchase price from the receiver. Had that been done, originally, we would of course have had the value as of that date, the value determined by what the people who were buying it thought it was worth; which is, after all, the real index of value under those circumstances. The Chicago-Milwaukee, I think, is an excellent parallel to that situation, and it has been just recently cleared up, and there was, as Mr. Stevens says, a very drastic writing down of values, but the writing down of values was accomplished, not by any arbitrary appraisal of different classes of equipment, but on the basis of what some one was willing to pay for it, which is, after all, the great index in connection with a situation of that sort. I appreciate that all this discussion, is leading to the question of the present capitalization of the C. N. R.; and after all, it gets down to this, the Canadian people have spent this money; whether it remains charged to Canadian National account as it is today, or charged to the Minister of Finance, Dominion Account, is not of much importance to the Canadian people; they are out the money anyway.

"What is of importance is a correct picture of this utility, and on that point, I think I can assure the Committee that both the Government and management are working on the question of capitalization, and have been now for a very long time.

I assure you it is a most complex thing, and frankly, we have almost abandoned the idea of getting at it on any basis of valuation. I think I can say that any basis of valuation, would appear to be the wildest guess with respect to a very large part of this property. We are looking at it now, rather from the point of view of relations between the Dominion and the company financially."

Steel Car Bill Opposed

Representatives of the railways testified at a hearing before the House Committee on post offices and post roads in opposition to the bill passed by the Senate to prohibit the use of other than steel railway post office cars, except in branch line service and on independently-operated "short lines." Testimony was given by H. E. Mack, manager of mail traffic of the Missouri Pacific, and chairman of the operating committee of the Committee on Railway Mail Pay, and other officers in charge of railway mail traffic. At the conclusion Alfred P. Thom, Jr., general solicitor of the Association of Railway Executives, summed up the position of the railways giving the following reasons why they ask that it be not passed:

1. The carriers owe a duty not only to the postal employees but also to passengers, shippers, their own employees and the public. The record of operation demonstrates that the hazard to postal employees is small. In 1926 there was one fatality, and this was not in a wooden or steel reinforced car. There were no fatalities in 1927.

2. Safety measures against train accidents have been progressively installed over a period of years, which contribute to the safety of postal employees as well as of other classes. To single out postal clerks and give them preferential treatment over passengers and the carriers' employees cannot be justified.

3. The Postmaster general now has adequate power, granted by statute, to provide for the safety of postal employees by requiring the use of all-steel cars in the event the occasion warrants.

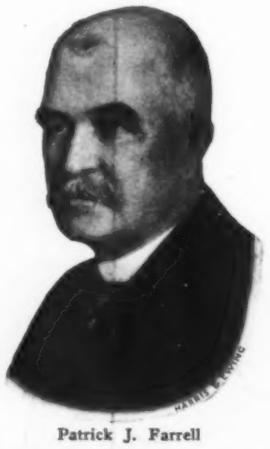
4. In the Postal Bulletin of May 18, 1927, the Postmaster general exercised this power by the promulgation of certain amendments to sections 1580 and 1583 of the Postal Laws and Regulations of 1924 which he regards as providing adequately for the protection of the postal clerks.

5. These amended regulations are now being complied with by the carriers and will be fully complied with at or about the time of the effective date of the bill under consideration.

6. The Postmaster general has advised the chairman of both the Senate post office committee and the House post office committee that he sees no necessity for additional legislation, as he feels he has ample power under section 7482a, Volume 7, of the United States compiled statutes of 1916, and is satisfied with the abovementioned arrangement which he has entered into with the carriers.

P. J. Farrell Appointed to Interstate Commerce Commission

President Coolidge on May 17 sent to the Senate the nomination of Patrick J. Farrell, chief counsel of the Interstate Commerce Commission, for appointment as a member of the commission, to succeed J. J. Esch, for a term expiring December 31, 1934. Commissioner Esch, having failed of confirmation by the Senate, is serving under a recess appointment good until the end of this session of Congress or until the qualification of his successor.



Patrick J. Farrell

Mr. Farrell has been connected with the commission in various capacities since 1902, when he entered the service as confidential clerk to the late Commissioner C. A. Prouty, who had been his law partner at Newport, Vt. He was appointed chief counsel on February 12, 1918, after having been the head of the law division previously with the title of solicitor. Therefore he has been handling litigation for the commission involving contests of its orders in the courts, for over twenty years, and, at least in recent years, has had a remarkable record for success in the cases which have reached the stage of decision by the Supreme Court.

This appointment represents the second instance in which a commissioner has been promoted from the commission's own organization. In 1913 John H. Marble was appointed a commissioner after having served as secretary and previously as attorney for the commission. Commissioner McManamy also served the commission for a number of years prior to his appointment, but when appointed he was in the service of the Railroad Administration. The appointment of Mr. Farrell was strongly urged upon the President by friends of the commission because of Mr. Farrell's long experience in the work of the commission, and although he is a Democrat, it was recommended by both Senators from Vermont, who are Republicans.

Mr. Farrell was born in Stanstead, Quebec, in 1861 and was educated at academies in Wells River and Newport, Vermont. After working on a farm he studied telegraphy and was employed for several years on the Connecticut & Passumpsic River Railroad as billing clerk, passenger conductor, station agent and train dispatcher. During this time Daniel Willard, now president of the Baltimore & Ohio, was a fireman and engineer on the same road. Mr. Farrell began the study of law in 1884, was admitted to the bar in 1887 and became a railway postal clerk in the same year. He left the mail service in 1889 and formed a law partnership with Mr. Prouty at Newport. He was for a time treasurer of the Orleans Trust Company and he gained some experience as a shipper as general agent for a Boston firm.

After coming to the commission under Commissioner Prouty Mr. Farrell was its first chief examiner and later was appointed solicitor. He was a member of the Democratic state committee of Vermont from 1888 to 1902 and was chairman of the Democratic state convention in 1894. In 1896 he was a delegate at large to the Democratic national convention, where he opposed the "free silver" doctrine of William Jennings Bryan.

Fight on B. & M. Station

E. D. Codman, a minority Boston & Maine stockholder, on May 22 was denied an injunction by the New Hampshire courts which he sought with the purpose of stopping work on the Boston & Maine's new North station at Boston. Mr. Codman has also filed a complaint with the Interstate Commerce Commission alleging an infraction of the Clayton law and, it is reported, the commission has granted a hearing on this complaint.

THE 14TH annual reunion of the traffic department of the Norfolk & Western, was held at Hotel Gibson, Cincinnati, Ohio, on May 22 and 23, with about 200 representatives present.

Traffic

The St. Louis-San Francisco's 150-mile extension from Aberdeen, Miss., to Kimbrough, Ala., was completed on May 14. The new line will be open for traffic about June 1 when elaborate ceremonies will be held.

The establishment of train service by the Great Northern from Bend, Ore., to Klamath Falls was celebrated on May 12 at Klamath Falls with a parade, the dispatching of the first train of Klamath basin products over the line by way of Bend and a May day fete. The line was opened one year from the date on which the Interstate Commerce Commission granted permission for its construction.

The Interstate Commerce Commission has denied a motion of Charles E. Cotterill for a severance of the issues under the Hoch-Smith resolution from the other issues in complaint cases which have been combined with the rate structure investigation-Part 3, cotton, and has granted request of Paul A. Walker for a further hearing for the presentation of additional evidence with respect to economic conditions affecting the production of cotton in Oklahoma.

The Great Northern. The Northern Pacific and The Soo Line will operate a dairy-poultry special train in North Dakota from May 28 to June 30. It will consist of 11 cars of which 9 will be exhibit cars. Three programs will be held daily, morning, afternoon and evening with about 90 meetings in all during the five-weeks period. One coach will be used to demonstrate modern practices used in turkey production, while another will show methods used in the production of chickens.

The Central Vermont announces the resumption, on May 27, of through passenger trains between Boston and Montreal, and Springfield and Montreal, the first since the flood of November 3, last. The work of rebuilding the road has so occupied the energies of the company that, until now, only local trains have been run. The rehabilitation of the Central Vermont tracks has required the movement of 700,000 cu. yds. of earth and ballast and the restoration of 21 bridges. The Montrealer and the Washingtonian have been operated over the Rutland between Bellows Falls and Rouse's Point. The "Ambassador" between Montreal and Boston will be restored on June 24.

Chairman Campbell Replies to Congressman Hoch

Chairman Campbell, of the Interstate Commerce Commission has addressed a reply to a letter from Representative Hoch, of Kansas, in which the latter gave the commission some advice as to his views as to the interpretation of Section 15a of the interstate commerce act and also expressed some impatience over the "long delay" in reaching action in the livestock and grain rate investigations now under way under the Hoch-Smith resolution.

Mr. Campbell says that although the grain investigation has been in progress for a full year there has been "absolutely no delay" and that the only effort made to delay the proceedings was not made by the railroads, as intimated by Mr. Hoch, but he points out that the reconstruction of the rate structure provided for in the resolution is "a gigantic task," that "there are no short-cut methods for making a record in such a huge proceeding," and that "the law makes the proceeding as huge as it is."

Chairman Campbell also reminds Mr. Hoch of some of the provisions of the Hoch-Smith resolution. The long series of extensive proceedings under the resolution, he says, have absorbed a large proportion of the time of the members of the commission and of its staff, and in spite of efforts toward condensing the record as far as possible a record of 34,000 pages has been accumulated in the grain case and before the final hearings are concluded there will be some additional thousands of pages. The livestock hearings are expected to be completed this month. In reply to Mr. Hoch's statement that it ought not take the commission three years to find out that a farm depression exists after Congress has declared it to be a fact and that "everybody knows it already," Mr. Campbell points out that such documents and expressions as Mr. Hoch referred to "may not lawfully be used by us as a basis for official action unless introduced in evidence by a witness who can properly explain them and answer questions regarding them."

Northwest Advisory Board

Optimism as to agricultural conditions, business and industrial activity in the Northwest during the coming months was expressed at the meeting of the Northwest Shippers' Advisory Board, at Watertown, S. D., on April 24. Rail transportation conditions throughout the Board's territory are excellent. The Joint Terminal Grain Committee reported that the movement of grain from country elevators has continued unusually heavy during the late winter and early spring but has been handled efficiently.

Speakers at the meeting included George R. Martin, vice-president of the Great Northern, and Dr. C. W. Pugsley, president of the South Dakota State College of Agriculture. Mr. Martin traced the improvement in railway service during the past six years, emphasizing the efforts and expenditures made by the carriers in the interests of better transportation but giving full credit on the Board and its members for their share in the transformation. Dr. Pugsley presented an analysis of the agricultural situation in South Dakota, stressing the progress which farmers of the state have made through scientific diversification of their operations. That soil, moisture and seeding conditions promise a bountiful harvest for Minnesota and the Dakotas this year, provided normal weather prevails during the next three months, was the consensus of the reports of the Board's state vice-chairmen.

A good delegation of board members from Minneapolis, St. Paul, Duluth and other Minnesota cities attended the meeting but the special feature was the attendance of over 200 business men and farmers from the vicinity of Watertown and from other South Dakota communities.

I. C. C. Order As to Transfer Charges Held Invalid

The Supreme Court of the United States on May 21 held invalid an order issued by the Interstate Commerce Commission which directed the railroads on the east side of the Mississippi river to bear the transfer charges on westbound freight moving through St. Louis and East St. Louis on combination rates which are the same to St. Louis as to East St. Louis. The district court had dismissed a suit brought by the east side lines to set aside the commission's order.

The commission, on a complaint filed by the west side lines, held that the matter in controversy is a "practice" within the meaning of the act and that the just and reasonable practice for the future would be for the east side lines to bear the transfer charges. The appellant railroads contended that the controversy involved rate and divisions and not a "practice" within the meaning of the act, and that the evidence before the commission was not sufficient to support its finding. The court holds that even if the matter were a "practice" the commission would not be authorized to set it aside without evidence that it was unjust or unreasonable and that it "appears to have relied on evidence tending to show that usually, when interchange is effected by means of an intermediate carrier, the delivering carrier bears the cost of switching." "But such a practice," the court says, "does not tend to prove that it is unjust or unreasonable for the appellee lines, in order to meet competition of other west side lines, to bear the cost of transfer in both directions, or that east side lines may not justly and reasonably limit their rates to East St. Louis when used in combination on through traffic at that gateway and so put appellee lines on an equal footing with their competitors.

"The same considerations apply in determining the reasonableness of the apportionment of revenues derived from combination rates as govern the division of joint rates. The merits of the changes made by the order cannot be determined without a consideration of facts substantially similar to those specified in paragraph 6 of section 15, relating to the division of joint rates. The case was not presented by complainants or considered by the commission on that basis. There was no evidence to show the amount of revenue required to pay operating expenses, taxes, and a fair return on the property of appellee lines or that their rates were not adjusted or were not sufficient to cover the transfer charges in question. There was nothing to support a finding that it is or will be unjust or unreasonable for the appellee lines to bear the cost of transfer of the westbound through traffic. The order cannot be sustained."

Equipment and Supplies

Locomotives

THE MISSISSIPPI CENTRAL is inquiring for 1 Mikado type locomotive.

THE INDIANAPOLIS UNION has ordered an eight-wheel switching locomotive from the Baldwin Locomotive Works.

THE ASHLAND, KY., division of the American Rolling Mill Company, has ordered three, 300-hp. oil-electric locomotives, to be manufactured jointly by the Ingersoll-Rand Company, the General Electric Company, and the American Locomotive Company.

Passenger Cars

THE MISSOURI PACIFIC is inquiring for 1 business car.

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has ordered 10 baggage cars from its own shops. Inquiry for this equipment was reported in the *Railway Age* of March 17.

THE ERIE has ordered 25 steel suburban passenger coaches from the Standard Steel Car Company; 5 steel baggage and express cars, 3 steel baggage and mail compartment cars from the Pullman Car & Manufacturing Corporation. Inquiry for this equipment was reported in the *Railway Age* of April 28.

Freight Cars

THE CHICAGO, BURLINGTON & QUINCY is building 250 stock cars at its Galesburg plant.

THE BARRETT COMPANY has ordered 100 insulated tank cars of 10,000 gal. capacity from the American Car & Foundry Co. Inquiry for this equipment was reported in the *Railway Age* of April 21.

THE INTERNATIONAL RAILWAYS OF CENTRAL AMERICA have ordered 25 flat cars and 50 gondola cars of 25 tons' capacity and 5 tank cars of 4,300 gal. capacity, from the Magor Car Corporation.

Machinery and Tools

THE CHICAGO, BURLINGTON & QUINCY is inquiring for one die grinder.

Signaling

THE CHICAGO, BURLINGTON & QUINCY has ordered from the General Railway Signal Company, material for color-light automatic block signals to be installed on its lines between Pacific Junction, Iowa, and Council Bluffs, 17 miles, single track; between Alma, Wis., and Stockholm, 21 miles, double track, and on the Colorado & Southern between Walsenburg, Colo., and Trinidad, 41 miles, single track.

Supply Trade

H. R. Sykes, has been appointed manager of sales of the locomotive division of the **Cincinnati Car Company,** Cincinnati, Ohio.

J. E. Heber, has been appointed vice-president of the **Truscon Steel Company** in charge of Pacific Coast activities with headquarters at Los Angeles, Cal.

Briggs & Turivas, Inc., has moved its general office from 110 South Dearborn street, Chicago, to 139th street, near Western avenue, Blue Island, Ill.

The Bassick Manufacturing Company, Chicago plans the construction of a three-story 18-ft. by 120-ft. addition to its plant to cost $175,000.

Joseph S. King, Jr., engineer of tests of the **Bradford Corporation** has resigned to become sales representative of the **Forsyth Draft Gear Corporation** with headquarters at Chicago.

Ross F. Hayes, 50 Church street, New York City, has been appointed general sales agent, at New York, for the **Hastings Signal & Equipment Company,** Boston, Mass.

Charles E. Tullar, assistant manager of the patent department of the **General Electric Company,** Schenectady, N. Y., has been appointed manager of the department, to succeed A. D. Lunt, deceased.

The Railroad Supply Company, Chicago has opened an office at room 908 State Planters Bank building, Richmond, Va., in charge of **J. C. Duranceau.**

The Foote Brothers Gear & Machine Company, Chicago has appointed **Woodbury & Wheeler** its representative at Portland, Ore., and the **Cunningham Electric Company** its representative at Tacoma, Wash.

C. A. Heiser, formerly assistant sales manager of the Southwest General Electric Supply Company, Dallas, Texas, has been appointed district manager of a new office opened at 409 Browder street, Dallas, by the **Oliver Iron & Steel Corporation,** Pittsburgh, Pa. Mr. Heiser will represent the line material and the belt, nut and rivet departments of the Oliver Corporation.

The Fairmont Railway Motors, Inc., Fairmont, Minn., and **Mudge & Company,** Chicago, have brought together their interests. The new company will continue the manufacture of all types and classes of both Fairmont and Mudge motor cars and other equipment. The general offices will be maintained at Fairmont, Minn., and the general sales offices will be located in the Railway Exchange building, Chicago. Branch offices will be maintained in New York, Washington, D. C., St. Louis, Mo., New Orleans, La., San Francisco, Cal., Winnipeg, Man., and Mexico City, Mex. The officers of the new company are: Chairman of the board, **H. E. Wade,** formerly president of Fairmont, vice-chairman of the board, **J. P. Dunning,** formerly vice-president of Fairmont; president, **Robert D. Sinclair,** formerly president of Mudge & Company; vice-presidents, **W. F. Kasper,** formerly chief engineer and manager of sales of Fairmont and **Albert C. Force,** formerly vice-president and treasurer of Mudge & Company; treasurer, **H. M. Starrett,** formerly treasurer of Fairmont; and secretary, **A. R. Fancher,** formerly secretary of Fairmont. Both manufacturing plants, the Mudge Plant at Chicago and the Fairmont Plant at Fairmont, will continue to operate the same as heretofore.

Westinghouse Electric & Manufacturing Company

Sales by the Westinghouse Electric & Manufacturing Company for the year ended March 31, 1928, totalled $175,456,815, falling short by ten million dollars of the peak sales of 1927, the largest in the history of the company. The net income available for dividends during the year just ended was $15,639,172.

The balance sheet shows cash of $19,585,024 against $13,477,607 of the year previous. Current assets total $122,000,000, whereas the current liabilities amount to only $15,000,000. Of the current assets, $61,000,000 consists of inventories, a reduction of $11,000,000 as compared with last year. The value of unfilled orders at the close of the fiscal year was $47,742,204 compared with $55,298,890 at the close of the preceding year.

The income statement follows:

	Year Ended March 31 1928	1927
Gross earnings — Sales billed	$175,456,815	$185,543,087
Cost of sales	161,347,356	169,764,086
Net manufacturing profit	$ 14,109,459	$ 15,779,001
Other income	3,031,704	2,585,614
Gross income from all sources	$ 17,141,163	$ 18,364,615
Interest charges, etc.	1,501,991	2,226,174
Net income available for dividends and other purposes	$ 15,639,172	$ 16,138,441

E. J. Blake has been appointed engineer in carge of the car lighting section of the **American Brown Boveri Electric Corporation,** Camden, N. J. Mr. Blake was born in Newark, N J. He was graduated from Princeton University in 1901, and served his apprenticeship in the student courses of the Westinghouse Electric & Manufacturing Company and the General Electric Company. He was connected with the electrical department of the New York Central & Hudson River, as assistant

engineer during the electrification of the New York terminal zone. Mr. Blake left that company to become electrical engineer of the Hall Switch & Signal Company, and then became electrical engineer of the Gould Coupler Company, and later of the Gould Car Lighting Corporation, leaving the latter company to assume his present duties. He is the inventor of a number of railways signals, automatic train control and car lighting devices.

E. J. Blake

W. J. Fendner has been appointed mechanical engineer of the **Schaefer Equipment Company,** Pittsburgh, Pa. Mr. Fendner was born at Pittsburgh, on January 18, 1891. After completing a high school course, he entered Carnegie Institute of Technology and was graduated from the mechanical engineering course in 1912. His first business experience was in the chemical department of the Crucible Steel Company of America. In 1913 he entered the employ of Gaither & Bradley and was engaged in the making of patent office drawings and general drafting. In 1914 he joined the Clark Car Company in the engineering department, his work with that company being in connection with car design and development. Mr. Fendner left the Clark Car Company, to go to the Schaefer Equipment Company as mechanical engineer.

W. J. Fendner

Construction

ATCHISON, TOPEKA & SANTA FE.—It is expected that a contract for the construction of a viaduct over the tracks of this company and the Missouri Pacific at Sixth avenue, Topeka, Kan., will be let before July 1. The viaduct which will be of steel and concrete construction will be 1,479 ft. long with a 36-ft. highway roadway and two 5-ft. sidewalks. The total cost of the viaduct, which is estimated to be about $500,000, will be borne by the Santa Fe, the Missouri Pacific and the City of Topeka.

ATLANTIC & NORTHWESTERN.—This company has applied to the Interstate Commerce Commission for authority to build a new line from Mt. Pleasant, to Jamestown, S. C., 50 miles. W. M. Blount, of Union Springs, Ala., is president.

BALTIMORE & OHIO.—The Public Utilities Commission of Ohio has upheld a ruling of the director of highways of that state requiring the elimination of a grade crossing on the line of this company at Glendale, Ohio, 10 miles north of Cincinnati.

CAMPBELL RIVER TIMBER COMPANY.—The British Columbia Department of Railways has authorized this company to construct a logging railway on Vancouver Island from a point near Campbell River, B. C., on Menzies Bay inland about 15 miles.

CANADIAN PACIFIC.—A contract has been awarded to the Stewart Construction Company, Winnipeg, Man., for the construction of an extension from Swift Current, Sask., to Stewart Valley, about 25 miles.

CANADIAN PACIFIC.—A contract has been let to the Nickerson Construction Company, Vancouver, B. C., for lining with concrete two tunnels on the main line on the Shuswap division and one tunnel on the main line on the Mountain division in British Columbia.

CENTRAL CANADA.—A contract for the construction of an extension from Whitelaw, Alta., to Waterhole, about 14 miles, has been awarded by the Department of Railways of Alberta to Rossa and Wickstrand, Winnipeg, Man.

CHICAGO, BURLINGTON & QUINCY.—This company plans the immediate construction of a pier at the foot of South Sangamon street and the Chicago river at Chicago for the transfer of freight from lake steamers to freight cars. Outside dimensions of the pier or boathouse will be 450 ft. by 60 ft., with three tracks affording a capacity for 36 cars. The new pier will take the place of the present structure at Sixteenth street which must be abandoned due to the channel change of the Chicago river between Polk and Eighteenth streets.

CHICAGO & NORTH WESTERN.—This company has awarded contracts aggregating $150,000 for the construction of steel and concrete bridges on its lines. Contracts have been let to Gaffin and Gehri, Fond du Lac, Wis., for the construction of the bridges on the Lake Shore, Ashland and Peninsula divisions, to Henry Danischefsky, Milwaukee, Wis., for the replacement of bridges on the Wisconsin and Madison divisions, to Bates & Rogers Construction Co., Chicago, for the replacement of bridges on the Black Hills and Wyoming divisions and to S. G. Cool, Chicago, for the replacement of bridges on the Southern Illinois and Iowa divisions.

DELAWARE, LACKAWANNA & WESTERN.—This road has let a contract to W. H. Gahagan, Inc., of Brooklyn, N. Y., for a side hill excavation in connection with track work at Dansville, N. Y. The approximate cost is $75,000.

EDMONTON, DUNVEGAN & BRITISH COLUMBIA.—A contract has been let to Rossa and Wickstrand, Winnipeg, Man., for the construction, subject to the passage of enabling legislation in the Dominion parliament, of an extension from Wembly, Alta., to Hythe, 25 miles.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—Included in the improvement program of this company for Schiller Park, Ill., for 1928, are the following projects: Construction of grade separation structures, one at the north end and the other at the south end of the yard; rearrangement of switching leads, and addition of 25 or 30 per cent to the capacity of the yard for freight purposes; yard tracks will be lengthened; receiving and dispatching yards will be constructed, the latter yard designed to accommodate trains of 125 cars, and a new main line will be built around the outside of the yard for movement of passenger trains. Mechanical department facilities will be rearranged to separate handling of road and switch engines in order to increase the efficiency in dispatching locomotives. The entire terminal will be provided with telephone facilities and an air testing plant.

MISSOURI PACIFIC.—A contract for the raising of track on the line between Arkadelphia, Ark., and Gum Springs, and south of Curtis, Ark., has been let to the List Construction Company, Kansas City, Mo., at a total cost of approximately $665,000.

MISSOURI PACIFIC.—This company plans the construction of a reinforced concrete viaduct over its tracks at Cross street and Lincoln avenue in Little Rock, Ark., at a cost of $40,000. The viaduct will be about 145 ft. long with a clear span over the tracks of 90 ft. and a 30-ft. highway roadway.

MISSOURI PACIFIC.—This company is making surveys for the construction of double tracks between Eureka, Mo., and Valley Park, 11 miles. From the latter point it is planned at some future date to construct a low grade line to the Mississippi river at Ivory, Mo., with the possi-

bility of eventually extending the line across the Mississippi to the freight terminal at Dupo, Ill.

MONONGAHELA (Chartiers Southern).—Bids will be received until June 4 for the construction of an extension of this railroad from Mather, Pa., to Waynesburg, 7 miles.

NEW YORK CENTRAL.—This company has awarded a contract to the Turner Construction Company, New York, for the erection of a two-story express building at the Curtis Street terminal, Buffalo, N. Y. Outside dimensions of the structure will be 60 to 300 ft.

PANHANDLE & SANTA FE.—A contract for the construction of a 14-story office building with outside dimensions of 90 ft. by 146 ft. at Amarillo, Tex., has been let to the Brennan Construction Company, Amarillo, at a cost of about $1,500,000.

PENNSYLVANIA.—The city of Ft. Wayne, Ind., has reached an agreement with this company for the construction of a street subway under its tracks at Anthony boulevard. The cost of the structure, which is estimated at $195,000, will be borne both by the city and the railroad with the railroad contributing 65 per cent of the amount.

TEXARKANA UNION STATION.—A contract for the construction of a union passenger station at Texarkana, Tex., and Ark., to be used by the Kansas City Southern, the Missouri Pacific, the St. Louis Southwestern and the Texas & Pacific has been awarded to the Stewart-McGehe Construction Company, Little Rock, Ark. The total cost of the station proper is estimated at $1,000,000. An additional $500,000 will be expended for improvements incidental to the station construction. The contract requires the completion of the station building by November 9, 1929, and the completion of the main building by October 7, 1928. The new station will be constructed on the site of the present station which is exactly on the Texas-Arkansas boundary line and will have six station tracks. The building will be built in the Italian Renaissance style of architecture, the main portion of the structure being two stories in height with two two-story wings. Immediately south of the main structure a building will be constructed to house mail distribution rooms.

ST. LOUIS SOUTHWESTERN.—A contract has been awarded to the Gifford-Hill Construction Company, Dallas, Tex., for the grading and concrete work on 67 miles of grade revision and track relocation between Mount Pleasant, Tex., and Tyler. The project involves the excavation of about 1,800,000 cu. yds. of earth and the construction of about 14 miles of new track. The laying of rail and ballasting will be undertaken by company forces. The total cost of the work is estimated at $1,900,000.

UNION PACIFIC.—Voters of Laramie, Wyo., have defeated a proposal to authorize the issuance of bonds for the construction of a grade separation structure over or under the tracks of this company at Laramie. The railroad has agreed to bear 50 per cent of the cost of the construction.

Financial

BUFFALO, ROCHESTER & PITTSBURGH.—*New Director.*—John R. Henning has been elected a director of this company, succeeding Samuel Woolverton, resigned.

CHICAGO & EASTERN ILLINOIS.—*Election of Director.*—Joseph B. Graham of Detroit, Mich., president of the Paige-Detroit Motor Car Company and the Graham Brothers Corporation, has been elected a director to succeed Frederick H. Ecker of New York who has resigned.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Bonds.*—The Interstate Commerce Commission has authorized an issue of $24,000,000 of general mortgage 4½ per cent bonds, to be sold at not less than par and interest, and the proceeds to be used to redeem outstanding bonds, to reimburse the treasury for the payment of matured bonds, and for other capital purposes.

CLINTON - OKLAHOMA - WESTERN OF TEXAS. — *Stock.* — The Interstate Commerce Commission has authorized this company to issue 100 shares of stock of a par value of $1,000 each, to be sold at par to subscribers, the proceeds to be used toward defraying a portion of the costs of the construction of its line.

COLORADO & SOUTHERN.—*Annual Report.*—The annual report of this company is summarized on adjacent advertising pages.

DETROIT, TOLEDO & IRONTON.—*Final Valuation.*—The Interstate Commerce Commission has issued a final valuation report as of 1918 finding the final value for rate-making purposes of the property owned and used for common-carrier purposes to be $11,931,300, while the value of the Toledo-Detroit, leased to the D. T. & I., was placed at $392,500. The investment in road and equipment of the D. T. & I., including land, was shown on its books as $22,703,151.

GREAT NORTHERN.—*Six Month's Guaranty.*—The decision of the Federal Court (*Railway Age* May 19, page 1178) dismissing the railroad company's petition against the I. C. C. certificates fixing the amount of the six-month's guaranty, was based on want of jurisdiction. The Supreme Court of the United States, in affirming the decision held that the certificates were not orders. They simply stated the amount due from the United States to make good the guaranty in section 209-22 Fed. (2d) 865. The company claimed that the certificates were orders, that they were issued without authority of law, and void. The United States and the Commission claimed they were not orders and that the United States had not consented to be sued. The Supreme Court says that the Transportation Act did not confer upon the Commission power to order anything in connection with the issue of the certificates, and that they contained no direction, no word of command, but were the recital of a finding of fact. The court did not decide that they were conclusive, but said that if that were a fact, it would not entitle the company to a judicial review, and concluded: "We find no reason for thinking that because Congress confided to the Commission the task of certifying the amount to be paid to carriers from the public treasury, as an incident to the World War, it thereby consented that the United States should be sued in the special proceeding in equity devised long before to control the Commission's execution of its regular functions in enforcing the Interstate Commerce Act." Opinion by Mr. Justice Brandeis.

GEORGIA & FLORIDA.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to create a new series of first mortgage bonds in the amount of $1,500,000 and to issue $1,000,000 of such bonds, series B, for the purpose of raising funds to complete construction of its extension from Augusta, Ga., to Greenwood, S. C.

KANSAS CITY SOUTHERN.—*Disposal of M-K-T Holdings.* — The Kansas City Southern has sold to Ladenburg, Thalmann & Co., and the National City Company, New York, 287,616 shares of common stock of the Missouri-Kansas-Texas, being all its holdings of that stock. The statement of L. F. Loree, chairman of the K. C. S., follows:

> The disposition of this stock is merely the completion of the liquidation of the Kansas City Southern's holdings of M.-K.-T. stock which has been in process through the market ever since the Interstate Commerce Commission handed down its report and order which, while recognizing the many advantages from the transportation standpoint of the unification of the Kansas City Southern, the M.-K.-T. and the St. Louis Southwestern into a single system, denied authority for basing that system upon the Kansas City Southern.
>
> The new plan, which is now before the commission, contemplates that Missouri-Kansas-Texas Railroad Co. shall be the base of the unified system, that company acquiring stocks of Kansas City Southern and St. Louis Southwestern. As the new plan does not contemplate any intra-system acquisitions or holdings of stock of Missouri-Kansas-Texas, the prompt liquidation of the remaining tock was deemed by the board to be advisable.
>
> In connection with the sale to the bankers it has been arranged that the record holders of common stock of Kansas City Southern at the close of business June 4, 1928, shall have the right to purchase from the bankers, on or before June 25,1928, 96/100 share of M.-K.-T. common stock for each share of Kansas City Southern held by them, at $33 a share. It is planned that purchase warrants evidencing this right will be mailed to the Kansas City Southern stockholders about June 5.

KANSAS, OKLAHOMA & GULF.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $3,951,000 first mortgage 5 per cent bonds, series 1978, to be sold at not less than 94 plus accured interest, proceeds to redeem or retire outstanding obligations and to reimburse its treasury for capital expenditures. Similar bonds to the amount of $67,800 have been authorized to be sold at not less than par, proceeds to be used to repay advances.

MARYLAND & DELAWARE COAST.—*Notes.*—The Interstate Commerce Commission has authorized this company to issue $4,126 of promissory notes, pledging $8,400

(*Continued on page 1235*)

Annual Reports

Seaboard Air Line Railway Company

NORFOLK, VA., April 30, 1928.

TO THE STOCKHOLDERS AND SECURITY OWNERS OF THE SEABOARD AIR LINE RAILWAY COMPANY:

In connection with the Annual Report for 1927 submitted to the stockholders by the Board of Directors, I think it appropriate that I should say a few words in regard to the present condition of the Company and its outlook for the year 1928.

During the Summer of 1927 a marked falling off in business occurred and the contraction has continued to date in 1928. We have, however, made a survey of business conditions in the territory served by the Seaboard and are confident that there will be a substantial improvement in traffic during the coming Summer and Fall and that, barring the unforeseen, gross revenues in 1928 should at least equal those in 1927.

While the figures for the first quarter of 1928 compared with 1927 show a falling off in gross revenue, we are confident that the decrease in revenues in the earlier part of the year will be offset by increases during the latter portion of the year.

As stated in the General Remarks of the Annual Report for 1927, economies have already been instituted and additional savings in expenses are being inaugurated which should result in greater net income after fixed charges for 1928 than in 1927 when it amounted to $1,281,000.

We have made curtailments in the operation of passenger trains and are only awaiting the consent of the various state commissions to further curtail passenger train operations.

The net income for the first quarter of 1928 is favorable, notwithstanding the decrease under 1927. March and April show indications of improving business conditions. Earnings for March, 1928, were satisfactory, the net income after fixed charges for that month amounting to $331,666 and it is expected that net income for April will exceed fixed charges by something more than $200,000.

The Seaboard serves one of the most rapidly developing sections of the entire country. During the last few years the growth of this section of the South has been conspicuous. In my opinion the development during the next few years will progress more rapidly than at any time in the past, with resultant steady increases in the Seaboard's traffic.

L. R. POWELL, JR.,
President.

Income Account

For the Year Ended December 31, 1927, Compared with Year Ended December 31, 1926

	1927	1926	Increase
Railway Operating Revenues	$61,790,149.93	$67,024,853.80	$5,234,703.87*
Railway Operating Expenses	46,873,315.06	49,253,001.64	2,379,686.58*
Net Revenue from Railway Operations	$14,916,834.87	$17,771,852.16	$2,855,017.29*
Railway Tax Accruals	3,567,048.89	3,472,001.02	95,047.87
Uncollectible Railway Revenues	33,436.34	18,953.15	14,483.19
Railway Operating Income	$11,316,349.64	$14,280,897.99	$2,964,548.35*
Equipment Rents—Dr.	814,954.70	2,129,363.48	1,314,408.78*
Joint Facility Rents—Dr.	112,635.15	137,356.04	24,720.89*
Net Railway Operating Income	$10,388,759.79	$12,014,178.47	$1,625,418.68*
Other Income	2,235,530.74	1,899,943.38	335,587.36
Gross Income	$12,624,290.53	$13,914,121.85	$1,289,831.32*
Rents and Other Charges	2,791,464.45	1,880,584.24	910,880.21
Applicable to Interest	$9,832,826.08	$12,033,537.61	$2,200,711.53*
Fixed Interest Charges	8,551,249.54	7,604,867.55	946,381.99
Interest Adjustment Mortgage (Income) Bonds	1,250,000.00	1,250,000.00	
Net Income	$31,576.54	$3,178,670.06	$3,147,093.52*

* Decrease.

Condensed General Balance Sheet—Assets

INVESTMENTS:		
Investment in Road and Equipment		$237,863,288.43
Sinking Funds		710.81
Deposits in Lieu of Mortgaged Property Sold		189,549.43
Miscellaneous Physical Property		4,145,929.12
Investments in Affiliated Companies		22,850,519.88
Other Investments		3,094,533.38
TOTAL		268,144,531.05
CURRENT ASSETS:		
Cash with Treasurer	$2,967,535.04	
Cash in Transit	897,820.42	$3,865,355.46
Special Deposits—Cash with Fiscal Agencies and Trustees	1,013,272.86	
Loans and Bills Receivable	86,483.75	
Traffic and Car Service Balances Receivable	1,300,321.08	
Net Balances Receivable from Agents and Conductors	370,274.69	
Miscellaneous Accounts Receivable	1,680,833.64	
Material and Supplies	5,558,179.14	
Interest and Dividends Receivable	409,403.45	
Rents Receivable	4,076.04	
Other Current Assets	112,540.38	
TOTAL		14,400,740.49
DEFERRED ASSETS		474,977.80
UNADJUSTED DEBITS		1,811,211.92
GRAND TOTAL		$284,831,461.26

Condensed General Balance Sheet—Liabilities

CAPITAL STOCK:		
Common Capital Stock	$37,019,100.00	
Preferred 4-2% Capital Stock	23,894,100.00	
Preferred 6% Capital Stock	37,300.00	
TOTAL		$60,950,500.00
FUNDED DEBT UNMATURED:		
Equipment Obligations	28,698,000.00	
Mortgage Bonds Proprietary Companies	32,636,000.00	
S. A. L. Railway First Mortgage Bonds	12,775,000.00	
S. A. L. Railway Refunding Mortgage Bonds	19,350,000.00	
S. A. L. Railway Company First and Consolidated Mortgage Bonds, Series "A"	50,747,500.00	
Income Bonds:		
S. A. L. Railway Adjustment Mortgage Bonds	25,000,000.00	
Miscellaneous Obligations:		
Secretary of Treasury of United States—Notes	14,443,887.84	
Director General of Railroads, United States—Note	2,000,000.00	
Union Signal Construction Company—Deferred Payments under Interlocking and Signal Contracts	1,595,280.00	
TOTAL		187,245,667.84
Non-Negotiable Debt to Affiliated Companies		1,246,368.62
CURRENT LIABILITIES:		
Loans and Bills Payable	1,050,000.00	
Traffic and Car Service Balances Payable	877,748.62	
Audited Accounts and Wages Payable	5,060,841.54	
Miscellaneous Accounts Payable	320,108.28	
Interest Matured Unpaid	847,590.66	
Funded Debt Matured Unpaid	149,627.20	
Unmatured Interest Accrued	2,638,363.69	
Unmatured Rents Accrued	985,343.34	
Other Current Liabilities	114,892.37	
TOTAL		12,044,515.70
DEFERRED LIABILITIES		505,636.43
UNADJUSTED CREDITS:		
Accrued Taxes	2,383,912.87	
Accrued Depreciation—Equipment	9,783,181.70	
Reserve for Outstanding Stock of Proprietary Companies	19,226.41	
Other Unadjusted Credits	2,345,954.80	
TOTAL		14,532,275.78
CORPORATE SURPLUS:		
Additions to Property Through Income and Surplus	622,581.12	
Funded Debt Retired through Income and Surplus	4,151.87	
Profit and Loss—Surplus	7,679,763.90	
TOTAL		8,306,496.89
GRAND TOTAL		$284,831,461.26

Accumulated and unpaid interest on Adjustment Mortgage (Income) Bonds amounting to $3,333,333.34 and payable out of future income, or otherwise, or at the maturity of the bonds, is not comprehended in the above balance sheet.

The Company is liable as a Guarantor of the following Securities and Obligations:

Birmingham Terminal Co. First Mortgage—Seaboard proportion 1/6 of	$1,940,000.00
Georgia and Alabama Terminal Company First Mortgage	1,000,000.00
Jacksonville Terminal Co. Refunding and Extension Mortgage—Seaboard proportion ¼ of	3,500,000.00
Macon, Dublin and Savannah Railroad Company First Mortgage	1,529,000.00
Richmond-Washington Co. Collateral Trust Mortgage—Seaboard proportion 1/6 of	10,000,000.00
Seaboard-All Florida Railway, Florida Western & Northern Railroad Company and East and West Coast Railway Joint and Several First Mortgage	27,194,000.00
Tampa & Gulf Coast Railroad Company First Mortgage	1,184,000.00
The Seaboard-Bay Line Company Section 210 Notes	2,905,000.00
Other guaranties	3,207,082.65

[ADVERTISEMENT]

Colorado & Southern Ry. Co.—Twenty-Ninth Annual Report

CHICAGO, January 3, 1928.

TO THE STOCKHOLDERS OF THE COLORADO AND SOUTHERN RAILWAY COMPANY:

Herewith is submitted the Twenty-Ninth Annual Report of your Board of Directors for the year ended December 31, 1927, setting forth composite income statement and statistics of operation for Colorado and Southern Lines included in this report. Balance sheets, income account and other statements of the several companies comprising the Colorado and Southern Lines are shown separately in the report of the Comptroller.

Comparative Statement of Income, Years Ended December 31

Per Cent of Ry. Oper. Rev.	1927		1926	Per Cent of Ry. Oper. Rev.
		RAILWAY OPERATING REVENUES		
77.46	$21,100,597.14	Freight	$21,639,916.76	76.81
14.98	4,080,246.50	Passenger	4,487,367.77	15.93
1.70	463,801.16	Mail	411,062.86	1.46
2.16	588,389.55	Express	544,730.50	1.93
2.19	597,408.59	All other transportation	638,890.93	2.27
1.19	323,360.72	Incidental	366,210.70	1.30
.32	86,848.61	Joint facility	84,627.05	.30
100.00	$27,240,652.27	Total railway operating revenues	$28,172,806.57	100.00
		RAILWAY OPERATING EXPENSES		
19.20	$5,231,304.43	Maintenance of way and structures	$3,214,624.37	11.41
18.25	4,969,772.48	Maintenance of equipment	5,155,101.17	18.30
1.49	405,599.05	Traffic	385,437.29	1.37
31.75	8,650,427.54	Transportation	9,043,522.49	32.10
.79	215,902.61	Miscellaneous operations	208,408.42	.74
3.71	1,009,644.60	General	995,869.32	3.53
Cr.1.01	Cr. 276,044.96	Transportation for investment—Credit	Cr. 29,642.88	Cr. .10
74.18	$20,206,605.75	Total railway operating expenses	$18,973,320.18	67.35
25.82	$7,034,046.52	Net revenue from railway operations	$9,199,486.39	32.65
.....	$1,448,600.27	Railway tax accruals	$1,750,816.72	.....
.....	27,709.31	Uncollectible railway revenue	8,595.90	.....
.....	$5,557,736.94	Railway operating income	$7,440,073.77	.....
.....	Dr. 446,123.51	Hire of equipment—Net	Dr. 559,933.78	.....
.....	Dr. 174,896.00	Joint facility rents—Net	Dr. 179,060.95	.....
.....	$4,936,717.43	Net railway operating income	$6,701,079.04	.....
		OTHER NON-OPERATING INCOME		
.....	$96,585.30	Miscellaneous rent income	$99,111.00	.....
.....	695,117.44	Dividends and miscellaneous interest	640,386.34	.....
.....	2,638.20	Miscellaneous income	1,821.39	.....
.....	$794,340.94	Total other non-operating income	$741,318.73	.....
.....	$5,731,058.37	Gross income	$7,442,397.77	.....
		OTHER DEDUCTIONS FROM GROSS INCOME		
.....	$3,632.10	Miscellaneous rents	$3,692.80	.....
.....	2,383,337.61	Interest on funded debt	2,460,138 81	.....
.....	20,640.16	Interest on unfunded debt	9,905.03	.....
.....	31,419.17	Amortization of discount on funded debt	31,756.42	.....
.....	13,423.60	Miscellaneous income charges	88,867.68	.....
.....	$2,452,452.64	Total other deductions from gross income	$2,594,360.74	.....
.....	$3,278,605.73	Net income	$4,848,037.03	.....
		DISPOSITION OF NET INCOME		
.....	$1,611,146.32	Dividends	$1,610,299.04	.....
.....	$1,611,146.32	Total appropriations of income	$1,610,299.04	.....
.....	$1,667,459.41	Income balance	$3,237,737.99	.....

General Operations

Revenues:

Total Operating Revenues for 1927		$27,240,652.27	
Total Operating Revenues for 1926		28,172,806.57	
Decrease		$ 932,154.30	3.31%

This decrease is made up as follows:

Freight	Decreased	$ 539,319.62	2.49%
Passenger	Decreased	407,121.27	9.07%
Mail	Increased	52,738.30	12.83%
Express	Increased	43,659.05	8.01%
Switching	Decreased	72,777.37	15.34%
Other Transportation Revenues	Increased	31,295.03	19.02%
Incidental Operating Revenues	Decreased	40,628.42	9.01%
Net Decrease		$ 932,154.30	3.31%

A comparison of tonnage by commodities with 1926 shows a net decrease as follows:

Products of Agriculture	Increased	57,786 tons	3.70%
Animals and Products	Increased	56,962 tons	23.91%
Products of Mines	Decreased	305,695 tons	6.71%
Products of Forests	Increased	16,661 tons	3.78%
Manufactures and Miscellaneous	Decreased	30,520 tons	1.42%
Less-than-carload Tonnage	Decreased	11,719 tons	7.36%
Total Tonnage	Decreased	216,525 tons	2.38%

A comparison of carloads shows:

Total Cars (all commodities) in 1927	279,424 cars	
Total Cars (all commodities) in 1926	279,950 cars	
Decrease in 1927	526 cars	.19%

In Agricultural Products there were decreases in tonnage of wheat, oats, other grain and hay, due largely to drouth along the line of the F. W. & D. C. Ry. These were more than offset by increased tonnage of cotton, cotton seed and products, vegetables and other products of agriculture.

The increase in the tonnage of Animals and Products was due to favorable markets and satisfactory condition of the ranges, and to increased feeding at cotton seed oil mill points.

There was a marked decrease in Products of Mines, principally in the movement of bituminous coal, due to labor troubles in the coal fields of Colorado. The falling off in building and construction activities resulted in decrease in tonnage of clay, gravel, sand and stone.

Decrease in Manufactures and Miscellaneous was pretty generally distributed among the different commodities and resulted from inactivity in the oil fields and in building generally, also from truck competition.

The reduction in passenger earnings was partly due to the abatement of the oil boom around Amarillo, Texas, and to the discontinuance of passenger service on the line between Denver and Silver Plume, Colorado. The decrease in passenger travel by train was largely due to increase in travel by private and public automobiles.

A summary of tonnage carried during 1927 is shown in the following table:

Operating Statistics:

Tons of revenue freight carried—1927	8,888,627	
Tons of revenue freight carried—1926	9,105,152	
Decrease	216,525	2.38%
Revenue tons one mile—1927	1,605,890,529	
Revenue tons one mile—1926	1,632,849,480	
Decrease	26,958,951	1.65%
Revenue tons per train mile—1927	552.84	
Revenue tons per train mile—1926	552.33	
Increase	.51	.09%
Revenue tons per loaded car—1927	24.40	
Revenue tons per loaded car—1926	25.14	
Decrease	.74	2.94%
Revenue passengers carried—1927	814,803	
Revenue passengers carried—1926	960,293	
Decrease	145,490	15.15%
Revenue passengers carried one mile—1927	121,831,760	
Revenue passengers carried one mile—1926	133,310,874	
Decrease	11,479,114	8.61%
Average distance carried—revenue passengers—1927	149.52	
Average distance carried—revenue passengers—1926	138.82	
Increase	10.70	7.71%

Operating Expenses are shown and in comparative form as follows:

Expenditures (Operating):

Total operating expenses—1927	$20,206,605.75	
Total operating expenses—1926	18,973,320.18	
Increase	$1,233,285.57	6.50%

The increase in Operating Expenses was due largely to increased rail relaying program and in prices of materials. Much of the released rail was sent to the new line of the Fort Worth and Denver South Plains Railway in Texas for use in the construction of that road.

Expenditures (Capital):

There were during the year net expenditures chargeable to Capital Account:

For road		$5,913,665.32
For equipment	Cr.	295,987.02
For general		127,685.15
		$5,745,363.45

During the past year the Company has benefited greatly by the efficient service rendered and loyalty shown by its officers and employes, and the management hereby expresses its appreciation of the interest thus shown in the welfare of the Company.

By order of the Board of Directors.

HALE HOLDEN,
President.

[ADVERTISEMENT]

Financial News

(Continued from 1233)

first-mortgage 6 per cent 20-year sinking fund bonds as collateral.

NEW YORK, CHICAGO & ST. LOUIS.—*Annual Report.*—The annual report for 1927 shows net income after interest and other charges of $6,639,477 as compared with net income in 1926 of $8,066,308. Selected items from the income statement follow:

NEW YORK, CHICAGO & ST. LOUIS	1927	1926
RAILWAY OPERATING REVENUES	$53,619,600	$54,938,491
Maintenance of way	6,683,235	7,057,603
Maintenance of equipment	10,137,157	10,717,935
Transportation	18,587,977	18,952,053
TOTAL OPERATING EXPENSES	38,574,494	39,990,395
Operating ratio	71.94	72.79
NET REVENUE FROM OPERATIONS	15,045,106	14,948,096
Railway tax accruals	2,719,955	2,998,864
Railway operating income	12,320,988	11,939,055
Hire of freight cars, Dr. Bal.	2,305,107	1,724,778
Joint facility rents, Dr.	69,473	110,672
Non-operating income	3,089,345	4,027,249
GROSS INCOME	15,410,333	15,966,305
Rent for leased roads	4,202	5,411
Interest on funded debt	5,325,125	5,398,861
TOTAL DEDUCTIONS FROM GROSS INCOME	8,770,856	7,899,997
NET INCOME	6,639,477	8,066,308
Disposition of net income		
Income applied to sinking funds	98,224	98,686
Dividend appropriations of income	4,540,839	4,887,239
Income balance carried to profit and loss	2,000,413	3,080,383

PENNSYLVANIA.—*Equipment Trust Certificates.*—This company will redeem on July 15, 1928, all of the outstanding and unmatured 6 per cent equipment trust certificates of 1920, issued to cover the purchase of equipment during the period of federal control for war time purposes. These certificates, which mature annually from January 15, 1929, to January 15, 1935, will be redeemed at the principal amounts and a premium of 3 per cent with accrued dividends to the redemption date. Certificates, with the January 15, 1929, and subsequent dividend warrants attached, are to be presented for redemption at the trust department of the Guaranty Trust Company, trustee, New York. The dividend warrant due July 15, 1928, should be detached and presented for payment in the regular manner.

PITTSBURGH & WEST VIRGINIA.—*New Director.*—E. W. Backus of Minneapolis, Minn., has been elected a director of this company, succeeding A. W. Thompson, deceased.

SEABOARD AIR LINE.—*Annual Report.*—The annual report of this company is summarized on adjacent advertising pages.

SEABOARD AIR LINE.—*Acquisition of South Georgia Not Permitted.*—The Interstate Commerce Commission has denied the application of this company and that of the Seaboard-All Florida to acquire or to acquire control of the South Georgia.

ST. LOUIS-SAN FRANCISCO.—*Equipment Trusts.*—The Interstate Commerce Commission has authorized this company to assume obligation and liability in respect of $6,000,000 equipment trust certificates, Series CC, to be issued by the Guaranty Trust Company, New York, at not less than 98.011 and accrued dividends, dated May 15.

TEXAS & PACIFIC.—*Equipment Trust Certificates.*— The Interstate Commerce Commission has authorized an issue of $1,500,000 of equipment trust certificates, to be sold at not less than 97.76.

ULSTER & DELAWARE. — *Maturity.*—A protective committee of bondholders has asked the deposit with it at the Central Union Trust Company, New York, of first mortage 5 per cent bonds of this company, following a report that the company will not be able to pay the principal on these securities which mature on June 1.

WABASH.—*New Director Elected.*—E. D. Stair, president of the Detroit Free Press Company, Detroit, Mich., has been elected a director succeeding Alvin W. Krech, deceased.

Dividends Declared

Alabama Great Southern.—Common, $2; common (extra), $1.50, both payable June 28 to holders of record May 24.

Alabama Great Southern.—Preferred, $2; preferred (extra), $1.50, both payable August 15 to holders of record July 11.

Boston & Providence.—2½ per cent, quarterly, payable July 2 to holders of record June 20.

Chesapeake & Ohio.—Common, $2.50 quarterly, payable July 1 to holders of record June 8.

Chestnut Hill.—$0.75, quarterly, payable June 4 to holders of record May 21.

Cincinnati, New Orleans & Texas Pacific.—Common, 4 per cent, semiannually, payable June 25 to holders of record June 8.

Consolidated Railroads of Cuba.—Preferred, 1½ per cent, payable July 2 to holders of record June 11.

Cuba Railroad.—Common, $1.20, payable June 28 to holders of record June 28.

Cuba Railroad.—Preferred, 3 per cent, payable August 1 to holders of record July 16.

Cuba Railroad.—Preferred, 3 per cent, payable February 1, 1929 to holders of record January 15, 1929.

Midland Valley Railroad.—Preferred, 2½ per cent, semiannually, payable June 1 to holders of record May 24.

Missouri-Kansas-Texas.—Preferred A, $1.75, quarterly, payable June 30 to holders of record June 15.

New York, New Haven & Hartford.—Preferred, $1.75, quarterly, payable July 2 to holders of record June 4.

North Pennsylvania.—$1, quarterly, payable May 25 to holders of record May 14.

Pittsburgh, Youngstown & Ashtabula.—Preferred, 1¾ per cent, quarterly, payable June 1 to holders of record May 21.

Average Prices of Stocks and of Bonds

	May 22	Last week	Last year
Average price of 20 representative railway stocks.	123.21	127.43	113.70
Average price of 20 representative railway bonds..	95.71	96.22	94.80

Valuation Reports

The Interstate Commerce Commission has issued final valuation reports finding the final value for rate-making purposes of the property owned and used for common-carrier purposes as of the respective valuation dates as follows:

Detroit, Toledo & Ironton	$11,931,300	1918
Uintah	1,035,200	1919

Officers

Executive

Incident to the merging of the Interoceanic with the National Railways of Mexico on May 1, the following officers of the former company have resigned: **M. Munoz,** general superintendent of transportation; **A. Flores,** superintendent of machinery and motive power; **I. Romo,** chief engineer; **R. Garcia,** chief auditor; and **M. Chavira,** chief surgeon, all except Mr. Munoz having headquarters at Puebla, Pueb., Mex. Mr. Munoz' headquarters were at Mexico, D. F. The duties of these officers have been taken over by corresponding officers of the National Railways, with headquarters at Mexico City.

Dr. Ira Puderbaugh of Ozawkie, Kan., has been elected vice-president of the Leavenworth & Topeka.

J. Ivan MacKay, chief clerk to the general superintendent of the British Columbia district of the Canadian Pacific at Vancouver, B. C., has been promoted to assistant to the general superintendent of the same district, with headquarters in the same city.

Joseph D. Gavin, who has been in charge of the train service desk in the passenger traffic department of the Southern Pacific at Los Angeles, Cal., has been elected vice-president and general manager of the Yreka Railroad, with headquarters at Yreka, Cal.

John Bose, who has been promoted to director of personnel of the Louisville & Nashville in charge of matters of wage and rule agreements and of safety, with headquarters at Louisville, Ky., has been in the service of that

John Bose

railroad for 46 years. He was born at Jeffersonville, Ind., on January 13, 1867, and entered railway service in 1881 as a messenger boy in the office of the superintendent at Louisville. Mr. Bose later became an operator, continuing in

that capacity, except for two years spent at the University of Kentucky, until 1889 when he was promoted to train dispatcher. In 1900 he was advanced to chief dispatcher and in the same year he was appointed general agent of the traffic and operating departments at Florence, Ala. Mr. Bose was promoted to assistant superintendent of the New Orleans and Mobile division, with headquarters at Mobile, Ala., in December, 1906, where he remained until August, 1915, when he was further promoted to superintendent of the Louisville division, with headquarters at Louisville. In August, 1917, he was transferred to the New Orleans and Mobile division, with headquarters at New Orleans, La. His appointment as director of personnel became effective on May 1.

H. M. Irwin, who has been appointed assistant to the president of the Delaware & Hudson, with headquarters at New York, was born at Quenemo, Kan., November 8, 1890. He was educated in the public schools and Topeka Business College, later taking special courses at New York University and Alexander Hamilton Institute. Mr. Irwin first entered railway service in 1909, when he was employed as a station helper by the Chicago, Rock Island & Pacific. He remained with this company in various capacities until 1917, when he resigned from the position of assistant division accountant. Following his resignation, Mr. Irwin entered the service of the Delaware & Hudson as a report clerk. He served successively as transportation clerk, road and equipment clerk, acting division accountant, statistical clerk, general bookkeeper, general accountant and disbursement accountant until 1921, when he was appointed assistant to the comtproller, a position which he held until his recent promotion to assistant to the president.

H. M. Irwin

Financial Legal and Accounting

J. F. Mote, who has been in charge of the per diem bureau and chief clerk to the auditor of equipment service accounts of the Southern Pacific at San Francisco, Cal., has been promoted to auditor of equipment service accounts, with headquarters at the same point, succeeding **W. H. Dewey** who has retired from active service under the pension regulations of the company.

A. B. Huttig, who has been connected with the stock transfer and registration department of the Illinois Central at New York, has been promoted to assistant secretary, with headquarters at Chicago. Mr. Huttig will have charge of the stock transfer and registration facilities in connection with the listing of the stock of this railroad on the Chicago Stock Exchange.

Operating

H. A. Broadbent, assistant general yardmaster of the Canadian National at Toronto, Ont., has been appointed assistant superintendent of terminals, with the same headquarters.

C. F. Lingenfelter has been appointed assistant superintendent of the New York division of the Pennsylvania, succeeding H. A. Hobson, promoted.

C. G. Smith, assistant general manager of the New Orleans & Lower Coast, has been appointed superintendent, with headquarters at Algiers, La., following the abolition of the positions of general manager and assistant general manager.

R. Vawter has been appointed trainmaster of the Sewell Valley sub-division of the Chesapeake & Ohio, with headquarters at Rainelle, W. Va., succeeding **I. Gaines,** who has been assigned to other duties. The position of assistant trainmaster of the Sewell Valley sub-division has been abolished.

The jurisdiction of **H. T. Moore,** trainmaster on the Missouri Pacific at Nevada, Mo., has been extended to cover the Pleasant Hill, Rich Hill, Granby and Madison districts of the Joplin division, succeeding **J. K. Hobbs,** who has been transferred to the White River division, with headquarters at Aurora, Mo.

George T. Cox, train dispatcher on the Illinois Central at Freeport, Ill., has been appointed acting trainmaster of the Freeport, Dodgeville and Madison districts of the Wisconsin division, with headquarters at the same point, succeeding **G. S. Rought,** who has recently been appointed a member of an examining board for train service employees.

William D. Boyce, trainmaster of the First district of the Fond du lac division of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Fond du lac, Wis., has been promoted to superintendent of the Missouri River division, with headquarters at Bismarck, N. D., succeeding **Charles M. Winter,** who was acting superintendent of that division and who has resumed his former position of assistant to the general manager, with headquarters at Minneapolis, Minn. **Bertram G. Cross** has been appointed trainmaster of the Second district of the Fond du lac division, with headquarters at Fond du lac, Wis., replacing **Edwin E. Neubecker** who has been transferred to the First district of the Fond du lac division.

Walter J. Yearsley, assistant superintendent of terminals on the Canadian National at Toronto, Ont., has been appointed superintendent of terminals, with headquarters at the same point. Mr. Yearsley was born on June 16, 1876, at Toronto. He entered railway service in March, 1892, as call boy on the Grand Trunk, being appointed yard clerk on December 7, 1894. He was promoted to the position of brakeman on May 3, 1896, and from December 27, 1902, to November 1, 1911, he served as a conductor, being appointed yardmaster on the latter date. On December 1, 1918, he became general yardmaster, serving in this capacity until November 16, 1927, when he was appointed assistant superintendent of terminals. His appointment as superintendent of terminals became effective May 1.

James L. Cameron, who has been promoted to superintendent of the Edmonton division of the Canadian National, with headquarters at Edmonton, Alta., has been connected with the operating department of that railroad for more than 26 years. He was born on February 26, 1873, at Lochaber, N. S., and entered railway service at the age of 17 years as a brakeman on the Canadian Pacific at Moose Jaw, Sask. For the following 20 years Mr. Cameron served in that capacity and as brakeman on the Chicago, Milwaukee, St. Paul & Pacific at Minneapolis, Minn., as brakeman and conductor on the Montana Central (now part of the Great Northern) at Great Falls, Mont., as conductor on the Seattle, Lake Shore & Eastern (now part of the Northern Pacific) at Seattle, Wash., as brakeman and conductor on the Southern Pacific at Los Angeles, Cal., as brakeman and conductor on the Canadian Pacific at Vancouver, B. C., and Nelson, and as brakeman and conductor on the Canadian National at Edmonton. He was promoted to rule inspector at North Battleford, Ont., in 1910, being advanced to trainmaster at the same point in November, 1917. Mr. Cameron was promoted to assistant superintendent at Edmonton on May 1, 1920. His promotion to superintendent of the Edmonton division became effective on May 1.

C. E. Whitlock, who has been promoted to general superintendent of the Southwestern division of the Pennsylvania, with headquarters at Indianapolis, Ind., was born at New Brunswick, N. J., and graduated from Rutgers College. He entered railway service in 1901 as a laborer on the New York division of the Pennsylvania. After being transferred to the operating department and advancing successively through

various minor positions Mr. Whitlock was promoted to superintendent of the Erie and Ashtabula division, with headquarters at New Castle, Pa. Later he was transferred to the Eastern division,

C. E. Whitlock

with headquarters at Pittsburgh, Pa., being transferred to the Pittsburgh division, with headquarters at the same point, in September, 1926. His promotion to general superintendent became effective on May 16.

L. L. Morton, who has been appointed superintendent of the New Orleans and Mobile division of the Louisville & Nashville, with headquarters at New Orleans, La., was born on April 2, 1884, at Mt. Eden, Ky. He graduated from a civil engineering course at Centre College in 1905 and entered railway service in June, 1906, on construction work in the engineering department of the Atlanta, Birmingham & Atlantic (now the Atlanta, Birmingham & Coast). Three years later Mr. Morton became assistant engineer in the engineering department of the Kansas City Southern at Texarkana, Tex.,

L. L. Morton

where he remained until 1912 when he was appointed assistant engineer in the miscellaneous department of engineering of the chief engineer's office of the Louisville & Nashville. During the World war Mr. Morton served successively in the United States Army as captain, major and lieutenant colonel of engineers. He returned to railroad service on the Louisville & Nashville in 1919 and was promoted to special engineer with headquarters at Louisville, Ky., on July 1, 1920. Mr. Morton's promotion to superintendent of the New Orleans and Mobile division became effective on May 1.

Engineering, Maintenance of Way and Signaling

A. R. Ketterson has been appointed assistant engineer of bridges of the Canadian Pacific, with headquarters at Montreal, Que.

Edwin Wise, Jr., assistant engineer in the office of the chief engineer of the Louisville & Nashville, with headquarters at Louisville, Ky., has been promoted to special engineer in the chief engineer's office, with headquarters at the same point.

Ralph H. Pinkham, who has been appointed engineer maintenance of way of the Southwestern division of the Pennsylvania, with headquarters at Indianapolis, Ind., has completed more than 30 years in the service of that railroad. He was born on January 16, 1880, at Nashua, N. H., and graduated from the

Ralph H. Pinkham

Massachusetts Institute of Technology in 1899. In June of the same year he became a draftsman in the engineering department of the Pennsylvania, being advanced to assistant supervisor in April, 1902. Mr. Pinkham was promoted to supervisor at Millville, N. J., in July, 1908, and to division engineer at Erie, Pa., in October, 1915. Three years later he was transferred to the operating department as assistant superintendent at Cresson, Pa., where he remained until September, 1918, when he was promoted to superintendent of the Norfolk division, with headquarters at Cape Charles, Va. In 1922 Mr. Pinkham was transferred to the Fort Wayne division, with headquarters at Fort Wayne, Ind. His appointment as engineer maintenance of way of the Southwestern division became effective on May 16.

J. E. Armstrong, assistant engineer of the Canadian Pacific, with headquarters at Montreal, Que., has been appointed assistant chief engineer, with the same headquarters. Mr. Armstrong was born on September 29, 1886, at Peoria, Ill., and educated at Bradley Polytechnic Institute and Cornell University. He first entered railway service with the Toledo, Peoria & Western

J. E. Armstrong

at Peoria, where he served in various capacities in the mechanical and engineering departments until 1906. From August, 1908, to August, 1912, he served as assistant on the engineer corps of the Pennsylvania Company (a subsidiary of the Pennsylvania) at Cleveland, and on the latter date he became assistant engineer in the chief engineer's office on the Canadian Pacific at Montreal. He served in this position until May 1 of this year, at which time he was appointed assistant chief engineer.

Traffic

Charles Thorburn has been appointed general agent in the freight department of the St. Louis-San Francisco at Atlanta, Ga.

P. F. Schowengerdt has been appointed director of agricultural development of the Wabash with headquarters at St. Louis, Mo.

J. L. Condon has been appointed general agent of the Western Pacific, the Sacramento Northern and the Tidewater Southern, with headquarters at Detroit, Mich.

V. F. Harvey, chief clerk in the passenger department of the Northern Pacific at St. Paul, Minn., has been promoted to assistant general passenger agent, with headquarters at the same point.

Mechanical

Don Nott, assistant master mechanic on the lines of the Chicago, Burlington & Quincy east of the Missouri river at Galesburg, Ill., has been appointed acting master mechanic at Creston, Iowa,

replacing **H. G. Kastlin,** who has been given a 60-day furlough.

H. G. Huber, assistant engineer of motive power in the Central region of the Pennsylvania, with headquarters at Pittsburgh, Pa., has been appointed master mechanic of the Monongahela division, with headquarters at Uniontown, Pa.

Harold H. Haupt, who has been promoted to superintendent of motive power of the Northwestern division of the Pennsylvania, with headquarters at Chicago, has been continuously connected with the mechanical department of that railroad for nearly 17 years. He graduated from the University of Pennsylvania, and entered railway service on June 14, 1911, as special apprentice on

Harold H. Haupt

the Pennsylvania. Five years later he was advanced to motive power inspector and on November 16, 1917, he was promoted to assistant master mechanic at Harrisburg, Pa. On October 1, 1918, Mr. Haupt was further promoted to assistant engineer of motive power, with headquarters at Williamsport, Pa., where he remained until 1924 when he was appointed master mechanic at Wilmington, Del. His promotion to superintendent of motive power of the Northwestern division became effective on May 16.

Obituary

Paul Didier, principal assistant engineer of the Baltimore & Ohio, with headquarters at Pittsburgh, Pa., died at Pittsburgh on May 19. Mr. Didier had been in the service of the Baltimore & Ohio almost 48 years, having first served with the Pittsburgh & Western, which is now a part of the Baltimore & Ohio. He also acted as Belgian Consul here for the past seven years.

A. K. Stone, former safety supervisor on the Erie, who died at Minneapolis, Minn., on May 13, first entered railway service as a brakeman on the Chicago, Burlington & Quincy. Later he became superintendent of the Omaha Railway & Bridge Co. and during 1898 and 1899 he was assistant general superintendent of the Kansas City & Independence Air Line and the Kansas City Suburban Belt (both now parts of the Kansas City Southern), with headquarters at Kansas City, Mo. From 1905 to 1914 Mr. Stone served with the Panama Railroad during the construction of the Panama Canal, acting as master of transportation, with headquarters at Cristobal, Pan., during the latter four years of that period. Returning to the United States in 1914, Mr. Stone was appointed trainmaster on the Great Northern at Grand Forks, N. D., where he remained until 1916 when he was promoted to superintendent, with headquarters at Havre, Mont. In 1918 he was appointed assistant superintendent of the labor and safety department of the Erie at New York, being promoted to supervisor of safety of the New York region, with headquarters at Jersey City, N. J., in 1919. Mr. Stone retired from active railroad service in 1926.

Alexander Kearney, superintendent of motive power on the Norfolk & Western at Roanoke, Va., died at the Roanoke Hospital on May 20, as a result of injuries received when he fell from his horse. Mr. Kearney was born on October 24, 1869, at Washington, D. C., and was educated at Georgetown University. He entered railway service in 1888 as a special apprentice on the Pennsylvania at the Altoona shops, serving consecutively to September 1, 1902, with the Pennsylvania system as assistant road foreman of engines of the Philadelphia division; engineer of motive power of the Philadelphia, Wilmington and Bal-

Alexander Kearney

timore division; assistant engineer motive power of the United Railroads of New Jersey division at Jersey City, N. J.; assistant engineer of motive power to the general superintendent of motive power at Altoona, Pa.; master mechanic at West Philadelphia, and superintendent of motive power of the Philadelphia, Wilmington & Baltimore division. From September 1, 1902, to February 1, 1903, he was superintendent of motive power of the Baltimore & Ohio lines west of the Ohio river, and from the latter date until April 1, 1905, he served in the same capacity on the Connellsville, Pittsburgh and New Castle division, and on the Pittsburgh system of the same road, from January, 1904, to April, 1905. From April 1, 1905, to November 1, 1918, Mr. Kearney was assistant superintendent of motive power on the Norfolk & Western at Roanoke. He was appointed superintendent of motive power on the latter date and held this position up until the time of his death.

Robert S. Parsons, chief engineer of the Erie, with headquarters at New York, died on May 18. He was born at Hohokus, N. J. on May 26, 1873, and was graduated from Rutgers College in

Robert S. Parsons

1895. He entered railway service in 1895 as a rodman for the Erie and the following year was promoted to the position of assistant engineer. In 1899 he was appointed division engineer of the New York, Susquehanna & Western. He returned to the Erie in 1903 as engineer, maintenance of way, and three years later was promoted to assistant general superintendent. He was appointed superintendent of the Susquehanna division in 1907 and was transferred to the New York division three years later, in the same capacity. On January 1, 1913, he was appointed assistant general manager of the lines east of Buffalo and Salamanca, with headquarters at New York. The following year he was appointed general manager of the Ohio grand division (the Erie's western lines), with headquarters at Cleveland, O. In January, 1916, he was appointed chief engineer and in the following year he became assistant to the president and chief engineer, and in November, 1917, he was appointed assistant to the president and general manager. Under the Railroad Administration he served as chief engineer and, upon the termination of government ownership in 1920, he became general manager. He was elected vice-president of the Erie in June, 1922, and in the fall of that year he went to Youngstown, O., as regional vice-president of the Erie System, returning to New York in February, 1927, to take up again the duties of chief engineer.

Two Sections—Section Two

Railway Age

Motor Transport Section

Devoted to the Co-ordination of Railway and Highway Service

FIRST HALF OF 1928—No. 21 MAY 26, 1928 SEVENTY-THIRD YEAR

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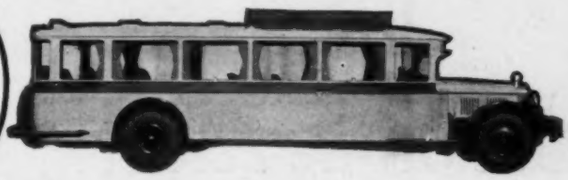

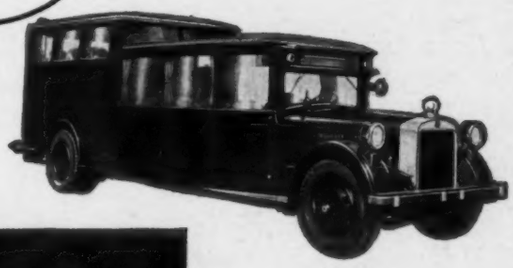

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Railway Age
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Devoted to the Co-ordination of Railway and Highway Service
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Vital Facts are available at no cost

Consult those who have compared

Railway Age
Motor Transport Section
Devoted to the Co-ordination of Railway and Highway Service

Vol. 84, No. 21 May 26, 1928

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Efficient Dispatching and Motor Truck Flexibility

THE basic advantage of the motor truck or the tractor and trailer as a carrier of freight is their flexibility. To secure the greatest benefit from this advantage, the operator of such equipment must have a system of dispatching of one sort or another. The dispatching system used by the Drayage Service Corporation, Oakland, Cal., which handles the transfer of freight by tractor and trailer between the stations of the railways there, is described in this issue of the *Motor Transport Section*. The operation is a large one in point of stations served, number of tractors and trailers used, and amount of freight handled regularly, and consequently presents an operating problem which is probably more difficult than that of most operations of the same sort. This company, as well as others of its kind, has two obligations: First, to have trailer equipment ready for immediate loading when it is needed and to move the loads to their destinations with no loss of time; and second, to protect itself from losses by securing a full day's work from each piece of equipment in the fleet, particularly the tractors. That the Drayage Service Corporation has been able to meet these obligations consistently has been due to its dispatching system. This system is simple but effective. It enables the dispatcher to anticipate the requirements that he will have to meet and to keep before him at all times a clear picture of the operating situation. This dispatching system and the company which utilizes it are successful because the farmer utilizes to the fullest extent the flexibility of the tractors and trailers. Truck, tractor and trailer operations are efficient only to the extent to which they do this.

Motor Coach Operation as a Tourist Attraction

THE motor coach operated by the railway is finding a profitable field, particularly in the West, as a carrier of tourists. It enjoys the advantage of being able to go where the train cannot go—"off the beaten path", to use the phrase emphasized by one of the railway operators of motor coach tours. Several lines have inaugurated such motor coach tours during the last few years. One road which has done an excellent piece of work along this line is the Atchison, Topeka & Santa Fe, which, through the Santa Fe Transportation Company, operated under Fred Harvey management, has opened up parts of the southwest which were formerly almost inaccessible. Its "Indian Detour," a three-day motor coach trip, which takes tourists to some of the most striking natural attractions in and around Santa Fe, N. M., has proved extremely popular. The fact that the Fred Harvey hotel facilities at Santa Fe are being trebled this spring and that two "Indian Detour" trips instead of one, will be offered soon, indicates the success that this operation is enjoying. The "motor land cruises," on which private parties are carried in company automobiles, are likewise attracting capacity patronage and are constantly extending over wider areas. The Santa Fe's operation has a number of distinctive features, notably the courier service, which are described in this issue of the *Motor Transport Section*. These features have contributed to the popularity of the Santa Fe motor coach and automobile tours, but they are not the basic reason for their popularity. The success of the operation is due first of all to the opening up by the motor coach of regions almost unknown when the railway was the only means of transportation. Its ability to go beyond the rail head is one of the strongest factors in favor of the motor coach. It is being put to good use of this sort in several parts of the West, and it can be put to similar use successfully in many other parts of the country.

The Motor Transport Division Meeting at Atlantic City

IN spite of the short time which has elapsed since the official organization of the Motor Transport Division its officers have been successful in arranging a program for the meeting at Atlantic City on June 21-23 which should set a mark in general interest and value that subsequent meetings will find it hard to beat. As now arranged, the Atlantic City meeting will be featured by reports covering the principal phases of motor coach, motor truck and rail motor car operation in their relation to the railways. To facilitate the making of studies of motor transport problems in various parts of the United States, the country has been divided into six regions. Each of these regions will be represented by three committees, one under the motor coach section, one under the motor truck section, and the third under the rail motor car section. The chairmen of these regional committees will constitute the national committees of their respective sections, under the three vice-chairmen of the division. There are thus 18 regional committees functioning in all parts of the United States and Canada. This plan of organization seems to be the best that could possibly have been selected. The various committees will be able to work to greater advantage on

account of their comparatively local nature and their reports should reflect the benefit of the more frequent meetings, for purposes of study and of report preparation which they will be able to hold. Furthermore, motor transport problems vary widely in different parts of the United States; by having special reports from these various localities, no part of the national situation will be neglected.

It is planned at this time to devote the first two days of the Atlantic City meeting to hearing the reports of the various committees, turning the third day's session into an open meeting to which representatives of the manufacturers of motor transport equipment and representatives of other groups will be invited. No prearranged program of addresses for this third day will be formulated; rather, it will be devoted to an informal discussion of the subject of motor transportation in its relation to the railways, as seen not only by the railway officers themselves but also by spokesmen for other organizations in the field. Such an informal discussion is expected to be of great interest and no little benefit, since it may have the result of correcting misunderstandings and of laying the foundation for more wholehearted co-operation between the various motor transport groups in the future. There is no question but that the Atlantic City meeting of the Motor Transport Division next month will be one of great interest to railway officers of virtually all departments. The work of co-ordinating motor transportation with railway transportation involves not only the officers especially designated to take charge of highway operations for the railways, but also those in other branches of railway work, since successful co-ordination depends, to a large extent, upon the degree of cooperation which is manifested by the officers in both groups. All railway officers who can possibly arrange to attend should be there.

Long Motor Coach Routes Appear to be Successful

THERE has been a tendency in the past to look upon the motor coach as an attractive carrier of passengers for short distances only, and to regard attempts to make the motor coach a long-distance carrier as foredoomed to failure. It has been generally recognized that motor coaches operating over short routes offer inducements in the way of convenience, comfort and sometimes economy that cannot be offered by other common carrier forms of transportation, but it has been contended that no persons in their right minds would travel in a motor coach for distances of a thousand miles if they could possibly avoid it, and that they certainly would not do so a second time. This illusion has been rather effectively shattered by the success of long-distance motor coach lines.

Long highway lines have been comparatively few in the past; at present they are numerous and are growing in numbers. One line, which originated on the Pacific coast, where long-distance transportation by motor coach had its inception, now operates its own motor coaches the length of the Pacific coast, from Vancouver, B. C., to San Diego, Cal., via Seattle, Portland, San Francisco and Los Angeles. It has other routes extending eastward to Salt Lake City, from both San Francisco and Los Angeles, and still others from Salt Lake City via Denver to Kansas City and St. Louis; while other principal routes cover part of the distance from Los Angeles and San Diego to El Paso, Oklahoma City, St. Louis and Chicago. Many thousands of miles of routes are covered each day by the motor coaches of this one company and it is only one of a number whose lines extend from Chicago to various parts of the Pacific coast. East of the Mississippi river, likewise, travelers who wish to do so may go by through motor coaches between almost any of the principal cities. One company with headquarters at Chicago has recently consolidated a large number of longer motor coach lines with the apparent intention of establishing through service from coast to coast. This system is growing rapidly through various consolidations and already covers an imposing portion of the map.

One has only to stand at the terminals of these companies and watch their motor coaches depart for points 500 to 1,000 miles distant, loaded to capacity with travelers, to be convinced that these long-distance lines, illogical though they may seem, are getting plenty of business.

It might be assumed that, long though these lines are, the greater proportion of their passengers travel on them only between local points not far apart. This does not appear to be the case, however, a check of the traffic on one large western system showing that well over half of the passengers carried ride the coaches for the full lengths of their long runs.

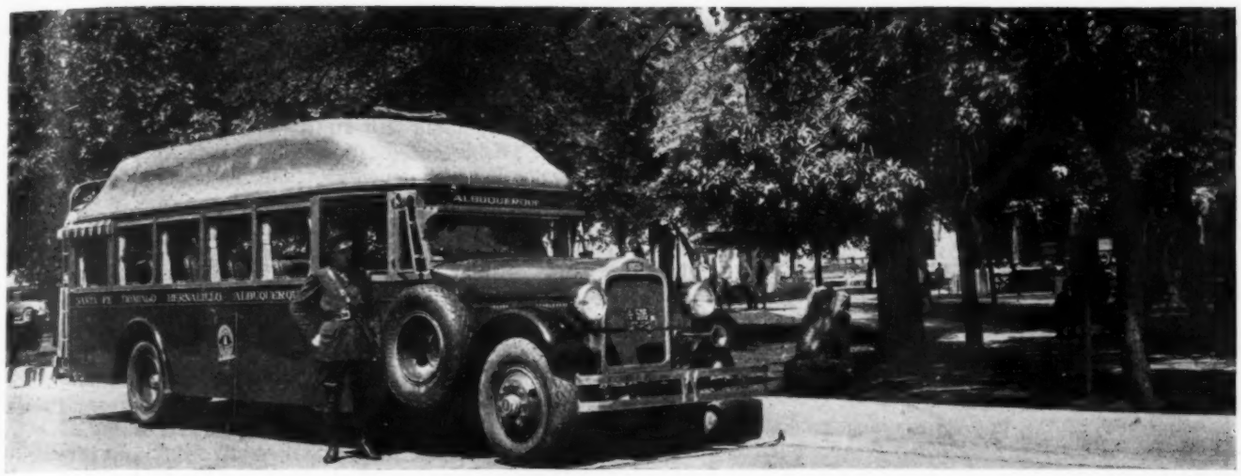
The strongest inducement which these lines have to offer as an attraction to passengers is their low rates. In some cases their rates are only a little under corresponding railroad rates; in others, they are as little as one-third of the railroad rates for the same journey. Motor coaches can be operated profitably at even such low rates if sufficient loads of passengers are available. In view of the capacity loads which the long-distance lines seem to be carrying, it is probable that many of them are making money at even their extremely low rates of fare. Certainly, they give the appearance of doing business at a profit, since their operations are constantly expanding.

What does the apparent success of the long-distance motor coach lines forecast for the future? Will the day come when long motor coach routes will duplicate every long railway route? Certainly, the trend is in this direction.

Perhaps the establishment of regulation for interstate motor coaches will have the effect of circumscribing to some extent the long-distance operations, but even this is doubtful. On the other hand, the continued improvement of the so-called "United States highways" which are being established all over the country is a factor strongly favoring the establishment of additional long-distance coach routes.

It appears that several classes of travel are developing in the United States. Travel at different rates for different classes is generally found in Europe; in this country there has been only one class on the railways, although this has been divided somewhat as between sleeping-car and day-coach passengers. The development of long-distance motor coach routes charging low rates of fare may establish a "low class" transportation in this country.

Motor coaches then would offer the cheapest and slowest means of travel; day coaches, the next cheapest and next slowest form of travel; and sleeping car trains, the most expensive and fastest form of transportation. There may be also a still more expensive and faster form of transportation when the airplane establishes itself as a large carrier of passengers. The outlook is interesting, but in many respects not encouraging to the railways unless they themselves are to operate motor coaches and airplanes.



White Model-54, 6 Cylinder, 25 Passenger Equipment Used on Regular Runs Between Santa Fe and Albuquerque

Santa Fe Tours Prove Popular

Traffic growing steadily as operations expand—Forty-one motor coaches, automobiles and motor trucks operated

THE ATCHISON, TOPEKA & SANTE FE, through the Sante Fe Transportation Company, which is operated under the Harvey Company's management, is providing an extensive motor tours service in New Mexico and even into some of the surrounding states, which is in a number of respects unique and distinctive. From the original motor coach installation, that of the so-called Indian-detour, the operation has expanded to the point where more than 40 motor coaches, automobiles and motor trucks are being utilized on four regular routes and a considerably greater number of special routes.

The primary purpose of the present operation is the exploitation of the scenic and historical features of a portion of the Far Southwest, that centering about Santa Fe, New Mexico, which in the past has not been readily accessible with full comfort and convenience and so has remained little known to the traveling public. In this development the Santa Fe Transportation Company's operations have been successful ever since their inception. The principal and most popular feature of the motor service offered has been the Indian-detour, an all-expense motor coach trip originally of three days duration, which may be inserted between Lamy, N. M., and Albuquerque, as a uniquely interesting break in the transcontinental train journey, and which includes in its back-country itineraries some of the most interesting localities, from a scenic and historical standpoint, in Spanish-Indian New Mexico.

In addition to the Indian-detour the company provides an almost unlimited number of special trips for private parties, which are made in automobiles. These tours, known as Harveycar Motor Cruises, are arranged in accordance with the wishes of guests almost anywhere in an immense territory where accommodations and roads have been carefully studied in advance. Such cruises are made to many points in New Mexico and frequently extend into southern Colorado and eastern Arizona. Often the cars used in this service, which is equivalent to touring with the finest private equipment, with every detail of accommodation cared for in advance, and with a hostess thoroughly familiar with the unusual country traversed, are away from the Santa Fe fleet headquarters for from one to two weeks or more.

Finally, there are the three ordinary local motor coach routes—one from Santa Fe to Lamy, 18 miles, which has completely replaced passenger train service; one from Santa Fe to Las Vegas, 75 miles; and the third from Santa Fe to Albuquerque, 65 miles.

Last year the Santa Fe Transportation Company carried 56,272 passengers on its various tours and regular coach operations, together with a heavy tonnage of mail and express. All the latter was carried between Santa Fe and Lamy.

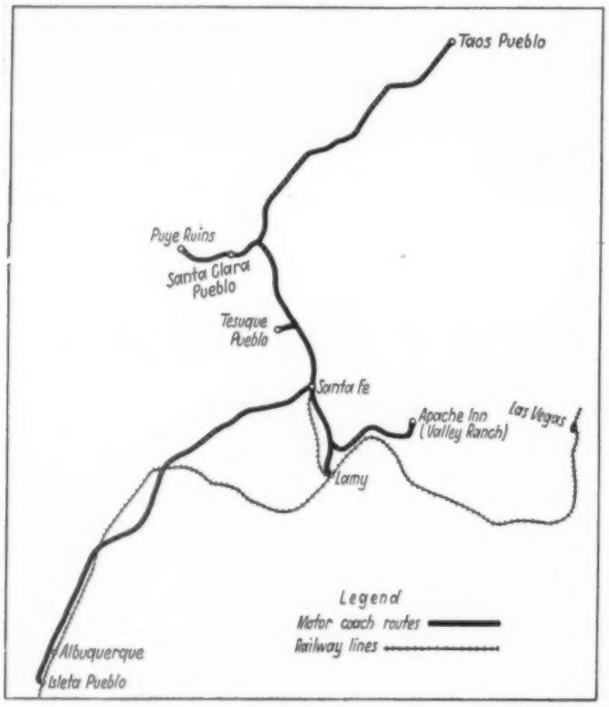
In 1927, the 48 units of equipment operated by the transportation company covered a total of 699,998 miles. Of this total 275,810 miles were covered by the Indian-detour motor coaches, 175,355 miles by the automobiles on special tours, and 123,453 by the motor coaches used on the three regular routes. The average operating cost of all the 48 pieces of equipment operated by the company in 1927 was 20.2 cents per mile, this figure including all charges such as taxes, insurance, depreciation, and so forth. The lowness of this figure is particularly surprising when the physical character of the country in which the Santa Fe Transportation Company operates is considered. Extremes of elevation between 2,000 and 10,000 feet above sea level are encountered. The majority of the routes used are in mountainous country, marked by grades requiring frequent and sometimes protracted operation of the motor coaches in the lower speeds.

The Management

The Santa Fe Transportation Company is operated for the Santa Fe and Fred Harvey by the Harvey Company. R. H. Clarkson, who is in charge of the various Harvey Company interests at Santa Fe, including La Fonda Hotel, has general supervision over the transportation company. Incidentally La Fonda was acquired to provide facilities of the highest type for Indian-

detour and Motor Cruise guests and is now being developed, at a further cost of several hundred thousand dollars, into the largest and finest of the many Harvey hotels.

E. S. Bauer is superintendent in charge of all motor operations, and Frank Horn is assistant superintendent in charge of the maintenance of the equipment. All of these officers have their headquarters at Santa Fe, where the principal garage and fleet base also is located.



Santa Fe Motor Coach Routes in New Mexico

One of the most distinctive features of the operation is a unique courier service. The couriers are young women who have been trained to provide visitors with interesting and authentic information on the history of the Southwest. Most of them are natives of New Mexico; those who are not have spent a number of years there, and all have an intimate knowledge of the exceptional interest of the region. The corps includes an advisory board, a chief courier, and 25 couriers. These couriers accompany all parties over the Indian-detour or on the special motor cruises in the dual capacity of hostesses as well as guides.

The Indian-detour

The Indian-detour was primarily designed to afford transcontinental travelers over the Santa Fe an opportunity to break the long rail journey with a three-day, 300-mile motor tour in the New Mexico Rockies. This summer a two-day tour as well as a three-day tour will be offered, the latter including new points of interest and an increased mileage. Convenient connections are made with Santa Fe westbound trains Nos. 3 and 23, the First and Second California Limiteds, and with eastbound trains Nos. 4 and 24, the First and Second California Limiteds, and No. 2, The Navajo.

Under the new Indian-detour schedules, effective May 15, 1928, westbound passengers detrain at Lamy. Leaving that point at 10.10 a.m. by motor coach they proceed northward to the Santa Fe Trail, turn eastward to the prehistoric ruins at Cicuye and lunch at Valley Ranch. Reaching Santa Fe, where the night is spent at La Fonda, in mid-afternoon, there is a conducted tour of the historic city. On the second day guests are taken by motor coach north and northwest of Santa Fe to the prehistoric cliff ruins of Puye and the inhabited Indian pueblos of Tesuque and Santa Clara, returning to Santa Fe in the evening. On the third morning those taking the two-day Indian-detour continue by motor to Albuquerque, entraining about noon, while guests of the three-day detour spend this entire day on a 150-mile drive up the gorges of the upper Rio Grande to Taos Indian pueblo and return. These passengers then proceed to Albuquerque on the fourth morning.

Eastbound, the routes of the Indian-detour are much the same, in reverse, with only such variations as are necessary to assure convenient train schedules. Trains are left at Albuquerque and rejoined at Lamy.

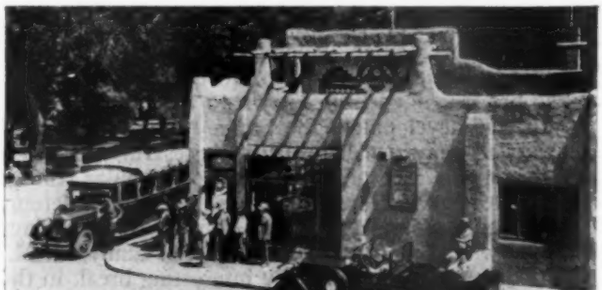
The all-expense rates for these two-day and three-day Indian-detours are $40 and $57.50 per person, and include all motor transportation, meals, hotel accommodations with bath, and courier service. Distances covered by motor coach are approximately 200 and 350 miles.

While the majority of Indian-detour passengers are carried by motor coach at the rates quoted above, private parties are often handled over the same routes in open or closed Packard Harveycars. For such private service somewhat higher charges, also all-inclusive, are made.

Harveycar Motor Cruises

Many other special trips in the vicinity of Santa Fe and Albuquerque are possible by Packard Harveycars at varying rates. These trips are from 25 to 185 miles in length and last from a few hours to two days.

Still longer private motor trips, called Harveycar Motor Cruises, can be arranged at any time to penetrate any part of the Southwest. Schedules for these cruises are worked out to suit the convenience and personal inclination of guests but are elastic and open to alteration en route when desired. While obviously no fixed mileage is set, the average day's run will probably be in the neighborhood of 100 miles.



Ticket Office and Motor Coach Terminal at Santa Fe

The rates by the day for these long cruises, including running expenses of the car, meals and accommodations, private courier service and drivers, are as follows: One person, $65 per day; two persons, $70 per day; three, four or five persons, $25 per day per person. These Harveycar Motor Cruises have proved most popular. They commonly penetrate throughout New Mexico and into parts of Arizona and Colorado, and this area of a quarter million square miles is being steadily developed as intensive study of routes, facilities and points of outstanding trip-interest progresses.

Three Motor Coach Routes

On the three regular motor coach routes, Santa Fe to Las Vegas, Santa Fe to Albuquerque, and Santa Fe to Lamy, five motor coaches are regularly used. Between Santa Fe and Las Vegas only one motor coach is necessary to make the daily round trip. The operator assigned to this run leaves Santa Fe at 8:30 a.m., arriving at Las Vegas at 11:20 a.m. The return trip is made leaving Las Vegas at 3:30 p.m. and arriving at Santa Fe at 6:30 p.m. Between Santa Fe and Albuquerque, three daily round trips are made, and two operators and two coaches are necessary to meet these schedules. Each operator makes three one-way trips per day, spending alternate nights in Albuquerque. One operator leaves Santa Fe at 9 a.m., arriving at Albuquerque at 11:20 a.m.; leaves Albuquerque at 12:55 p.m., arriving at Santa Fe at 3:30 p.m.; leaves Santa Fe again at 4:30 p.m. and arrives at Albuquerque at 6:50 p.m. to tie up for the night. The other operator leaves Albuquerque at 7:55 a.m., arriving at Santa Fe at 10:30 a.m.; leaves Santa Fe at 1 p.m., arriving at Albuquerque at 3:20 p.m., and leaves Albuquerque at 4:55 p.m., arriving at Santa Fe at 7:30 p.m. The passenger fare between Santa Fe and Las Vegas is $3.50 one way; that between Santa Fe and Albuquerque is $3.00 one way. For small steamer trunks a charge of $1.00, irrespective of distance carried, is made. No trunks over 100 lbs. in weight are accepted.

Exceptionally frequent motor coach service is rendered between Santa Fe and Lamy to connect with main line passenger trains at the latter point. A total of 8 round trips per day is made by the two motor coaches and operators assigned to this run, the one-way trip requiring 45 minutes. Main line trains are held when necessary to connect with the motor coach service.

A feature of the Santa Fe-Lamy operation is the fact that local fares and all through railroad tickets to and from Santa Fe include delivery of passengers and baggage to their homes or hotels, or collection from such points of departure, within the Santa Fe city limits.

For this purpose a small motor coach and two small trucks are used. In the case of passengers leaving Santa Fe to connect with main line trains, the transfer motor coach calls for them in time to connect with the Lamy coach at the motor coach terminal. Baggage is collected by the motor truck not later than one hour before the departure of the motor coach. Hand baggage is carried free. Other personal baggage is checked between Santa Fe and Lamy and then to destination. On full fare tickets a minimum charge of 50 cents is made for the first 150 lb. of baggage. Excess baggage between Santa Fe and Lamy is charged for at the rate of 15 cents per 100 lb. These rates include special collection and delivery service.

Since passenger service between Santa Fe and Lamy has been discontinued, mail, baggage and express is handled between these points by motor truck. This truck makes four round trips per day between the two points, a driver and a helper being assigned to it. On account of the heavy loads of mail, baggage and express consigned to Santa Fe, which are brought in on trains No. 7 and No. 8, a truck and trailer are operated on one round trip a day to connect with these trains. First class mail is handled on the motor coaches.

White Indian-Detour Motor Coach and Packard Harveycar Near Glorietta, N. M.

Equipment Operated

The equipment operated by the Santa Fe Transportation Company includes the following: Fifteen Model-53 White motor coaches, carrying 11 passengers, a courier and a driver, the coaches being especially designed for the Indian-detour service; 13 Packard touring cars and sedans, including 10 eight-cylinder cars and 3 six-cylinder cars; two Model-50-B White motor coaches of 25-passenger capacity, one of which is used between Santa Fe and Lamy and the other between Santa Fe and Las Vegas; two Model-54 six-cylinder White motor coaches carrying 25 passengers, which are used between Santa Fe and Albuquerque; one Model-Y Yellow coach seating 28 passengers, which is used between Santa Fe and Lamy; two Model-51 White trucks, one equipped to handle a Wolverine semi-trailer, which are used in the Santa Fe-Lamy mail, baggage and express service; one Studebaker truck, one Graham Bros. truck, and one Cadillac motor coach, all used in the Santa Fe city

transfer service; a Model-51 White wrecking car, which is completely equipped; one Buick touring car used by the superintendent, and one Chrysler roadster used by the traveling inspector.

All of the motor coaches, except the Cadillac used in the city transfer service, are of the parlor type. The Indian-detour coaches have swivel chairs, while the other coaches have the standard arrangement of individual seats in pairs, those in the six-cylinder White coaches being staggered. All of the motor coaches and automobiles are known as Harveycars and carry the Thunderbird insignia of the Santa Fe Transportation Company. All the cars are painted with Duco, the color applied below the panel being known as briska brown, the upper body being mecca tan. The color of the Duco applied to the inside of the coaches is courier cream. A special grade of leather is used for all automobile and motor coach seat covering and headlining.

The company has done some experimenting with baggage handling facilities on the roofs of the motor

Interior of Indian-detour Motor Coach

coaches. The usual roof racks covered with tarpaulin were first replaced by wooden boxes and then by steel boxes. The Model-54 White motor coaches, however, have long aluminum containers built on the roof, these containers being streamlined and opening on a depressed aisle which extends the length of the roof. At the present time, the openings from the aisle into the containers are covered by canvas flaps, but these are to be replaced by hinged metal doors.

The motor coaches do not have the usual driver's curtain which shuts off the driver's compartment at night. The practice now is to extinguish the ceiling lights in the coaches at night when they are in operation.

Passengers may use small lights set into the body posts if they wish to read. All of the coaches contain literature fully descriptive of all phases of Harvey-car motor service in the Southwest, which is carried in small boxes adjacent to each set of seats.

The Packard cars, used in the special tour and motor cruise services, have a trunk at the rear and a baggage rack on the left running board to handle the baggage of the passengers. The baggage rack of the running board is covered with canvas. These cars carry two spare tires, as well as a shovel, an axe and a canteen set for gasoline, oil and water. High compression cylinder heads are being applied to some of the cars in an effort to improve their performance and experiments are being made with Ethyl gasoline in connection with the high compression motors.

[This is the first of a series of articles on the operations and operating methods of the Santa Fe Transportation Company. The second will appear in an early issue of the *Motor Transport Section*—THE EDITOR.]

Reading Buys an Independent

THE Reading Transportation Company, which, as was related in the *Motor Transport Section* of April 28, page 1012, began the operation of a number of motor coach lines in Pennsylvania, has now acquired by purchase a line in New Jersey. This line extends southward from Atlantic City to Cape May, serving various south Jersey seashore points, and has a route mileage of 55. The acquisition of the line by the Reading Transportation Company has yet to be approved by the New Jersey Public Utilities Commission and, until this approval is secured, the line will be operated by its former organization, Shore Service, Inc. The route will be revised to terminate at the Reading station in Atlantic City and the Reading station in Cape May.

The motor coach service will be co-ordinated with that of the Reading trains, making train side connections at Atlantic City to and from Philadelphia and New York. The company has announced its intention of placing in service new, modern equipment on this line when the transfer is authorized. A connecting motor coach line from Cape May Court House to Avalon, operated by Shore Service, Inc., during the summer months, will be continued.

The Company is planning to start its Carlisle-Gettysburg route (29 miles) and Carlisle-Shippensburg route (22.7 miles) on June 1. Other routes on which operations will start at an early date are: Pottsville-Frackville-Shenandoah (12 miles) and Mahanoy City-Ashland (11.5 miles).

Other routes planned for and awaiting the consent of the Pennsylvania Public Service Commission include the following: Pottsville-Tremont-Lykens (32 miles); Jenkintown-Feasterville (9.5 miles); Glenside-Penllyn (7 miles); Glenside-Chalfont (13.5 miles). This gives a total of 262.5 route miles which the Reading Transportation Company either has in operation or contemplates placing in service at an early date.

The Automotive Full-Diesel Engine*

Operating performance compared with the gasoline engine —Electric starters may be used

By R. J. Broege
Buda Company, Harvey, Ill.

AN automotive full-Diesel engine was developed in 1923 and sold in Germany to the commercial trade; a unit that has been proved out in actual service under private and individual ownership. Since 1925, this engine has been applied to commercial trucks, motor coaches, motorboats, cranes, rail cars, electric generator sets and the like. The American-built Diesel, with which this paper deals particularly, is built under a license and to the patents of the Maschinenfabrik Augsburg-Nurnberg, Germany, generally known as the M. A. N.

Fig. 1 shows a four-cylinder, 50-h.p. compressorless solid-injection full-Diesel truck engine which is also built in a six-cylinder model having the same bore and stroke as those of the four-cylinder engine. These automotive Diesel engines should in no way be compared with the commonly known slow-speed heavy Diesels of either the air-injection or solid injection types. This type of automotive Diesel engine will perform economically with cheaper fuel over a wide range of service such as in commercial motor trucks or in excavator machinery, equally as well as gasoline engines and with far better fuel economy and less fire risk.

The engine shown in Fig. 1 has a 4½-in. bore and a 7⅛-in. stroke. One of these Diesel truck engines has been in service for several months in a truck owned by the Buda Company and has been put in parallel

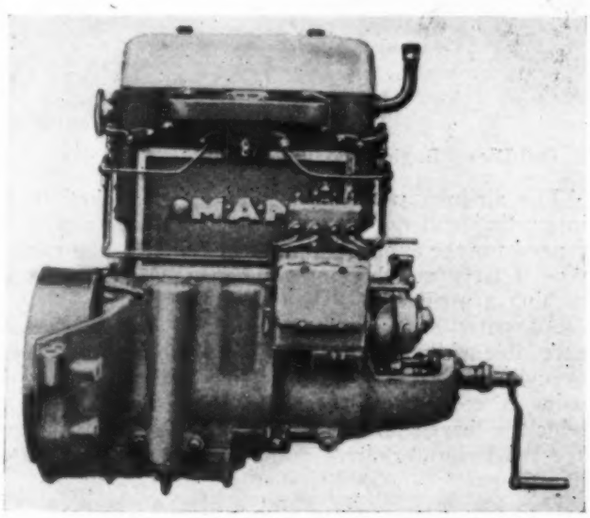


Fig. 1—A Full-Diesel Truck Engine Which Develops 50 hp.

service with that of our gasoline-engine trucks. It is of 50-hp. and weighs 1,100 lb. It was installed in a well-known four-ton truck chassis made in this country, and no alteration was required in the length of the hood or in the radiator.

Fig. 2 shows the service and performance curves of this Diesel-engine truck as compared with a gasoline-engine truck. Both trucks are of the same make and capacity and perform the same service. No special attention is given other than regular periodical inspection and greasing. The four-ton, gasoline-engine truck has a four-cylinder engine of 4½ in. bore and 6-in. stroke.

Contrary to the general belief, the cooling of this

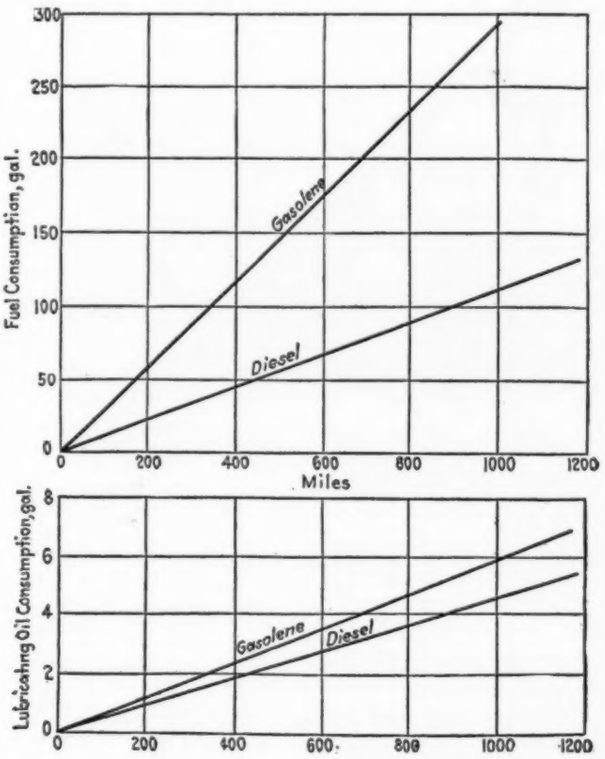


Fig. 2—Gasoline Engine Versus Diesel Engine Performance Curves

Diesel engine was far easier than that of the 4½-in. by 6-in. four-cylinder gasoline engine. The same radiator was used as for the gasoline engine and, during the summer months, the water never heated sufficiently to raise the temperature so that the red fluid would come up to the average running mark on the motometer. When cool weather began, it was found necessary to provide the radiator with a shutter to keep the engine up to a temperature suitable for good operation.

Engineering Features

Fig. 3 shows the automotive compressorless solid-injection full-Diesel engine built by our company. It has a 6-in. bore and an 8-in. stroke, and is of four-cycle operation. The view at the left is of the fuel-

* Abstract of paper presented before the Annual meeting of the Society of Automotive Engineers, held at Detroit, Mich., January 24 to 27, inclusive.

pump side and shows the fuel filter, the fuel dividers, the inlet and the exhaust manifolds and the elbow for the air filter application. At the right is a view of the water-pump side of the same engine and shows the lubricating-oil tank equipped with a sight glass, the lubricating oil dual gear-type pump and its piping and filter, the crankcase breather, the centrifugal water pump, the removable push rod cover plates, the cylinder head covers and the nozzle clamps.

In the design and construction of the American-built engine, no attempt was made to deviate from the principles involved in the M. A. N. design. The only purpose was to make this already highly developed engine more adaptable to American standards and practices and to simplify it where possible to aid service and production. Fig. 4 shows a cross-section of this engine.

The crankcase and cylinder housing are of boxed construction cast in block for any number of cylinders.

drive automatically engaging the ring gear on the flywheel. To aid the initial turning over of the engine, a manually controlled compression can be engaged on one cylinder until it fires, after which all cylinders can be engaged.

The valves are located in the cylinder heads and are operated by rocker arms and roller push rods. Valve tappet adjustments can be made conveniently by removing the cylinder head covers, which leaves the rocker arms in plain view without obstruction by accessories or other parts. The valve-in-head design is used to obtain the desired compression space for the most efficient pressures. The inlet valve has no integral deflector on the head which, with the angular direction of the fuel spray, produces the necessary turbulence for the complete mixture of air and fuel that is necessary to produce clean combustion. The cylinder heads are cast in pairs to secure lightness and to facilitate easy removal, and are protected by safety-valves.

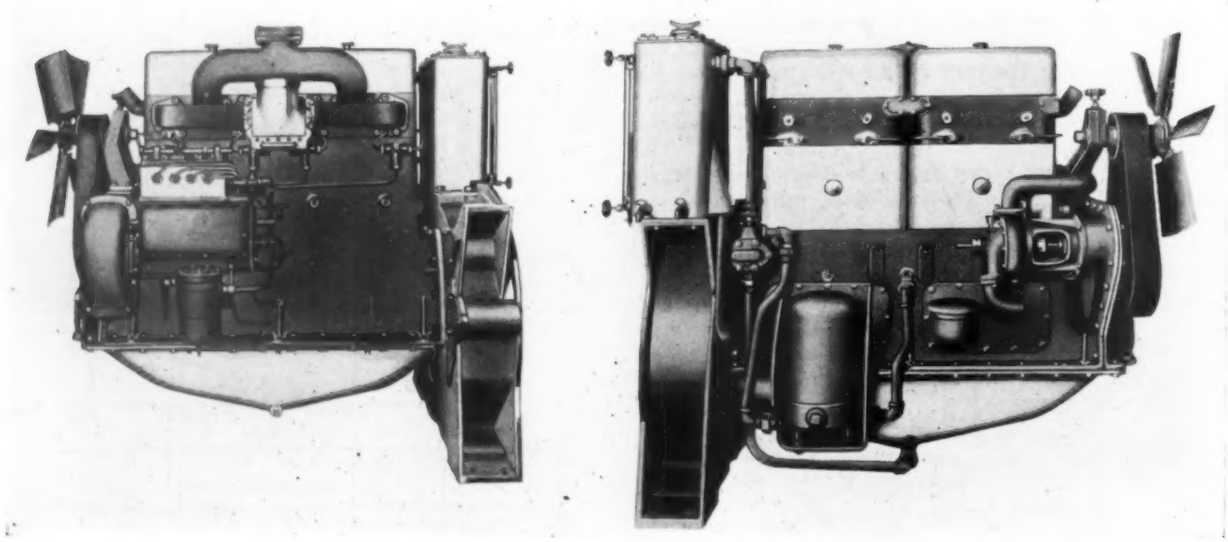


Fig. 3—An American Built Full-Diesel Engine

This produces a rigid and light design and causes the engine to operate very smoothly. The cylinder proper contains a gray iron inserted sleeve which is readily renewable. The main babbitt-lined bearings are suspended in the crankcase and secured by inserted bolts; there is a bearing between each pair of cylinders.

The oil-pan is of aluminum to secure lightness so that it can be easily dropped, as in most automotive type gasoline engines, for bearing adjustment. Provision has also been made for removing the pistons and rods from the bottom, but they can also be removed through the top, if desired. Hand-holes are provided on the side of the crankcase for adjustment of the connecting rod bearings.

The crankshaft and the flywheel are balanced both statically and dynamically. The flywheel is provided with a steel starting-gear and is enclosed in a No. 00 or a No. 0 S. A. E. flywheel housing, the latter being the smallest one practicable because of the necessity of using a large flywheel to produce energy for starting and to assure steady operation.

Starting and Control

Electric starters can be used for starting purposes, or a two-cylinder air-cooled double opposed-piston gasoline-engine; either system is arranged with a gear

The air-inlet pipe has a preheater attached to aid in starting under extremely cold conditions and is arranged for the application of an air filter. The exhaust pipe is large and has an outlet flange suitable for attaching a muffler.

All parts are completely enclosed but are readily accessible after removing the hand-hole plates, push-rod or cylinder-head covers. Cooling is accomplished by using a conventional waterpump of centrifugal type which is driven off the gear train. Provision is made for the generator drive from off the extended water-pump shaft.

Lubrication and Other Features

Force-feed lubrication to all moving parts, by a dual geared pump operating a dry-sump system, is a feature of the engine. Oil is taken from the supply tank which is mounted on the flywheel housing, thence the pressure pump forces it through the filter to the main and camshaft bearings. From the main bearings, the oil goes to the crankpins and up the drilled connecting rods to the wrist pins. It is also forced to the rocker-arm assembly and to the fuel pump. The timing gears are lubricated by a jet of oil directed to each pair at the point at which the gears mesh.

The oil from the main bearings and all other moving

parts drains to the bottom of the sump pan, from which the sump pump returns it through a screen to the supply tank. Mechanical lubrication of the pistons has also been provided for, if desired. The constant oil pressure is maintained and protected by safety valves. All oil passes through screens before entering the pumps, and then through the filter before it reaches the moving parts. The dry-sump system helps to accomplish this and also enables the engine to be operated at any reasonable angle without leakage and without starving any bearing surface.

Careful consideration has been given to accessibility of all working parts for ease of inspection and servicing. The integral crankcase and cylinder housing with walls between the cylinders from top to bottom gives a very rigid construction and permits the use of much thinner sections, which tends to decrease the weight of the engine.

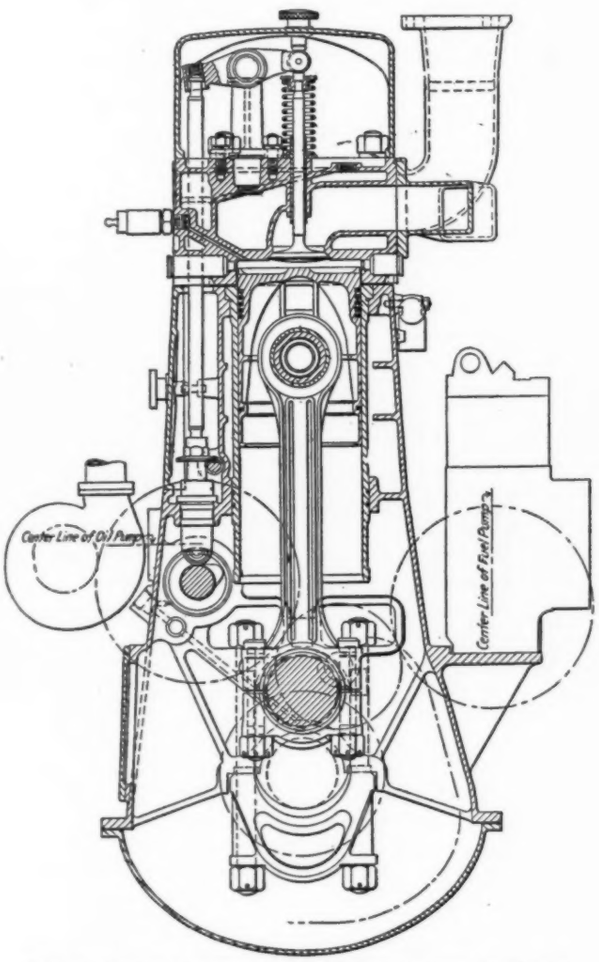


Fig. 4—Cross-Section of the Engine Shown in Fig. 3

The fuel pump is mounted on a bracket integral with the crankcase and is positive, being driven off the timing-gear train. It is a cam-actuated plunger type with a plunger and a cut-off valve for each engine cylinder. The cut-off valve and plunger are actuated by fulcrum tappets interposed between the main drive cams and the plunger and cut-off valve. The cut-off valve can be adjusted easily in the same manner as when adjusting ordinary valve tappets. All moving parts are enclosed in a common housing and operated by one drive shaft having integral drive cams.

The engine speed actually is controlled by the governor, which is built into the fuel pump and operates the controlling, or cut-off valves. These valves can also be controlled manually, if desired. The speed of the engine is increased or decreased by the point of the fuel cut off and the duration of injection, depending upon the plunger and valve position in relation to the piston position and speed. The two controls are the only ones for operating the engine and correspond very closely to the spark and gasoline controls of the gasoline engine. The location of the fuel-injection advance lever can be determined and located readily for a wide range of speed, and the engine is then controlled by the fuel cut-off lever the same as is accomplished by the carburetor-control lever on a gasoline engine.

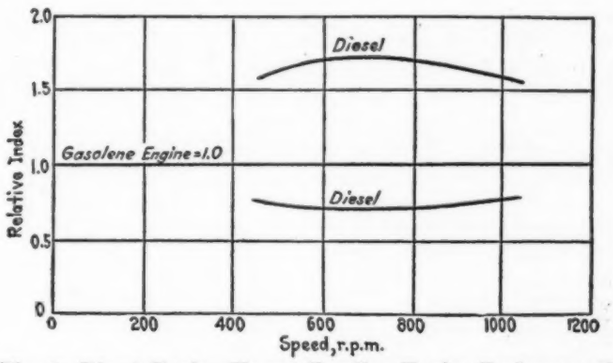


Fig. 5—Diesel Engine Versus Gasoline Engine Performance

The nozzles are of the open and solid-injection type. They have one single opening and are all interchangeable. They are as easily removed and cleaned as spark plugs are, and they do not require cleansing any oftener than spark plugs do because the fuel is filtered very carefully through special filters of fine metallic gauze before entering the fuel-pump, from which it passes through to the injection nozzles. The fine gauze is of such mesh that any foreign matter which can pass through it will also pass through the nozzles, thereby eliminating the possibility that the nozzles will become clogged.

Figs. 5 and 6 are charts of the relative performances of this Diesel engine and a gasoline engine of the same bore, both having been tested on the same dynamometer at the Armour Institute of Technology. The charts give a rather clear conception of the operating economy of the Diesel over that of the gasoline engine. The economy in fuel consumption is not counteracted by any other operating costs, for, as illustrated, the

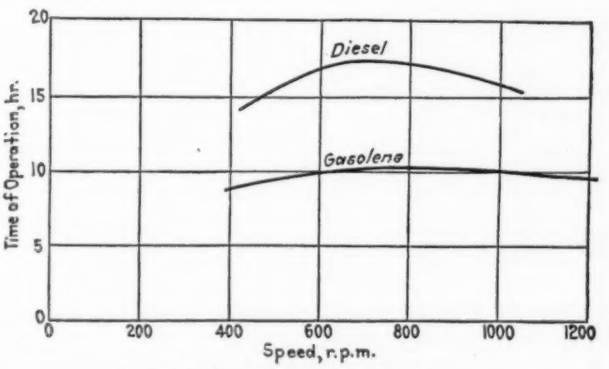


Fig. 6—Relative Performance Curves

simplicity of design and accessibility of all parts keep labor and maintenance costs at the minimum. Up to the present, tests have been conducted with three grades of fuel.

Table I gives the analysis of the three grades of fuel and shows their wide range which will give a correspondingly wide source of supply. The engine burned each of these fuels equally well during all tests. In addition to the light weight, the small space required and

Table I—Analysis of Three Fuel-Oils Used

	Test Fuel		
	No. 1	No. 2	No. 3
Specific gravity, deg. Baumé at 60 deg. F.	38.2	34.3	26.0
Carbon content by the Conradson test, per cent	0.006	0.03	2.57
Flash point by the Pensky-Martin closed-cup test, deg. F.	160	225	200
Water and sediment, per cent	0.06	0.10	0.10
Heat units, per pound, B.t.u.	19,675	19,590	19,234
Sulphur content, per cent	0.31	0.63	0.78

its simplicity as compared with the conventional Diesel engines with air-compressor injection, this engine has many other points of merit when compared with other types of engines.

The simplicity of this engine in addition to its greater economy of operation which, at the same time, results in a high degree of reliability with small wear and tear, indicates that automotive Diesel engines are possible, even compared with the present heavy-duty type of gasoline engine, the weight and the space required being about equal. The S.A.E. standards can be applied to it to practically the same degree.

Motor Truck and Rail Tonnage Compared in Ohio*

IN order to determine what proportion of the total tonnage of commodities moving between cities is hauled by motor truck, and also to develop the factors influencing the choice of motor truck or railroad, an analysis was made of the net tonnage hauled between Columbus and 34 Ohio cities by motor truck and rail lines.

The cities selected are located from 7 to 134 highway miles from Columbus and were chosen to permit an analysis of the effect of length of haul upon the proportions of tonnage transferred by motor truck and railroad, respectively. Hillsboro and Johnstown, both having indirect rail connections with Columbus, were selected to determine the effect of indirect rail connections upon motor truck transportation. Commercial Point, Dublin, Reynoldsburg and Rome were selected to ascertain the amount of tonnage hauled by truck between points having no railroad facilities.

Motor truck net tonnage and railroad carload and less-than-carload tonnage data for an average month of 1925 were taken as the basis for this comparison.

Distance an Important Factor

It is apparent that distance is an important factor in the amount of tonnage hauled by motor truck. Between Columbus and Akron, Cincinnati and Toledo, distances of over 100 miles, a very small part of the total tonnage is hauled by truck, while between Columbus and Grove City and between Columbus and Alton, distances of eight and nine miles, respectively, almost all of the tonnage is transported by motor truck.

Table I presents a summary of the relation between

Table I—Proportion of motor truck and railroad net tonnage according to length of haul for average month, 1925†

	Motor Truck		Rail C.L.		Rail L.C.L.		Total	
Length of haul (highway miles)	Tons	Per cent	Tons	Per cent	Tons	Per cent	Tons	Per cent
Less than 20	6,091	84.5	1,112	15.4	10	0.1	7,213	100.0
20-39	5,973	54.7	4,803	44.0	145	1.3	10,921	100.0
40-59	2,299	32.0	4,484	62.4	404	5.6	7,187	100.0
60-99	980	24.2	2,409	59.4	663	16.4	4,052	100.0
100 and over.	157	2.3	5,280	77.4	1,383	20.3	6,820	100.0

† Based upon tonnage between Columbus and 30 cities having rail connections.

motor truck and rail tonnage according to length of haul.

Truck Tonnage Decreases as Distance Increases

Although other factors besides length of haul influence the proportions of total tonnage hauled by motor truck and rail lines, respectively, and although the number of cities in each zone of haul (Table I) is not large, there is clearly indicated the tendency for the proportion of motor truck tonnage to decrease with increase in distance. For hauls of less than 20 miles, 84.5 per cent of the total tonnage is transported by motor truck; between 20 and 39 miles, motor truck tonnage is 54.7 per cent of total tonnage; and for the longer hauls, motor truck tonnage is 32.0, 24.2, and 2.3 per cent, respectively. As the percentage of motor truck tonnage decreases with increase in distance, both rail carload and less than carload tonnage increases. No appreciable amount of L. C. L. tonnage is noted under 40 miles. Between 49 and 59 miles the L. C. L. tonnage is 5.6 per cent of the total and this percentage increases to 20.3 for distances of 100 miles or more.

Other Factors Controlling Tonnage

Among other factors controlling the portion of total tonnage hauled by truck are the type of commodities and rail facilities. An illustration of the former is indicated in the movement between Columbus and Johnstown. Although Johnstown is only 22 miles from Columbus by highway and 41 miles by railroad, 73.1 per cent of the tonnage is hauled by rail, practically all of which moves in carload lots. This high percentage of rail tonnage, considering the comparatively short highway mileage and the longer rail connection, is due to the type of commodity transported, 95.7 per cent of the total tonnage being gravel, sand and stone. These commodities cannot be hauled economically by motor truck for this distance, as is indicated by the fact that the average length of haul for trucks hauling gravel, sand and stone in Ohio is only 10 miles.

The influence of indirect rail connection upon the proportion of motor truck and rail tonnage is shown between Columbus and Hillsboro, a distance of 65 miles by highway and 97 miles by railroad. Between these points 47.5 per cent of the total tonnage is carried by motor truck. Reference to Table I shows that, under normal conditions, between 40 and 59 miles, only 32.0 per cent of the total tonnage is carried by motor truck, and that between 60 and 99 miles the corresponding figure is 24.2 per cent. It is evident that the relatively high percentage of motor truck tonnage between Columbus and Hillsboro is due, in large part at least, to the fact that the distance by highway is 32 miles shorter than the distance by railroad.

* From a report by the U. S. Bureau of Public Roads and the Ohio Department of Highways on a survey of transportation on the state highway system of Ohio.

State Commissioners Favor Interstate Truck Regulation

Of 19 replies to requests for statements 14 favored regulation, 2 oppose it at this time and 3 express no opinion

THE statement is frequently heard that "the motor truck cannot be regulated." It has been heard with more than usual frequency during recent weeks when the proposed enactment of legislation by Congress, which would regulate interstate motor carriers, has been the subject of extended discussion. A number of state commissions now regulate interstate motor truck common carriers. Feeling that these commissions are best qualified to express an authoritative opinion upon whether or not motor trucks operating interstate can and should be regulated, the *Railway Age* addressed letters to the chairmen of these commissions, asking them to tell of the results of the regulation of motor trucks within their states and to express their views upon the desirability of regulation of motor trucks operating as common carriers interstate.

Nineteen replies to these inquiries have been received. Of the 19 state commissions thus represented, 14 expressed the opinion that there should be regulation of common carrier motor trucks operating interstate; 2 question whether there should be such regulation at this time, and 3 express no opinion.

The two commissions which do not favor immediate regulation of interstate motor trucks are those of Colorado and Nevada. The Public Utilities Commission of Colorado has been exercising regulatory control over common carrier motor trucks in that state since 1925. Discussing the effect of this supervision and the desirability of federal regulation of motor trucks, Otto Bock, chairman of the commission, says, "In my opinion it is still too early to determine just what effect regulation has had upon the character and extent of motor truck transportation. The contract carrier, who because of certain United States Supreme Court opinions is not subject to regulatory power, has been able in a competitive sense to make regulation of common carriers difficult.

A number of truck operations in this state claim to be contract carrier operations and, since the dividing line between a contract carrier and a common carrier cannot always clearly be defined, it has been difficult to enforce common carrier regulation affecting trucks. Furthermore, the public, in my opinion, does not to any great extent understand the technic of regulation. Until the contract carrier situation as it relates to competition with the common carrier has been somewhat clarified, it is my opinion that it will be difficult to regulate truck common carriers efficiently.

"The larger cities in our state are so located that the interstate truck operator has not given us very great concern. Our view, therefore, may not reflect the national necessities. It would seem to me, however, that because of the uncertainties still existing it would perhaps be better to retain the present competitive situation on interstate trucking until experience has given us more light than we now have. Since motor vehicle truck operations are still in the formative period and the public is not being very greatly injured thereby, it would perhaps be better to wait and obtain the benefit of further experience before regulating motor vehicle carriers interstate."

J. F. Shaughnessy, chairman of the Public Service Commission of Nevada, where the truck lines have been regulated since 1919, says, "Regulation of these automotive common carriers has been performed successfully in this state and the operators are desirous of having such regulation for the protection which is accorded thereunder. Interstate regulation should be approached cautiously for the reason that interstate truck traffic is very small in volume at present when contrasted with the total traffic moving by motor truck and care must be taken not to make truck operation too cumbersome. Possibly for the time being, appropriate road licenses will have the effect of controlling it sufficiently for all practical purposes. At least it seems to be working out that way in our state."

The three commissions expressing no opinion on the question of the desirability of the regulation of interstate motor trucks are those of Pennsylvania, Vermont, and Illinois. E. M. Vale, chief of the Bureau of Public Convenience of the Public Service Commission of Pennsylvania, which has been regulating motor trucks in the state under the provisions of the Public Service Company Law of Pennsylvania, dated January 1, 1914, states that the result of such regulation has been beneficial. Henry B. Shaw, chairman of the Vermont Public Service Commission, says, "Regulation has probably reduced the number of trucks used as common carriers." Julius Johnson, secretary of the Illinois Commerce Commission, where motor truck regulation was first undertaken in 1914, states, "There are only seven companies in Illinois operating as common carriers for the transportation of freight and these are short lines. There is very little, if any, operation of interstate motor freight lines."

Fourteen Commissions Favor Interstate Regulation

The 14 commissions expressing opinions favorable to the enactment of legislation providing for the regulation of interstate common carrier motor trucks are those of Indiana, Iowa, Maryland, Michigan, Montana, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Utah, Virginia and Wyoming. None of the commissions of these states report that regulation of motor trucks under their jurisdiction has been unsuccessful. On the contrary nearly all of them say that such regulation has been beneficial, not only to the public but to the truck operators themselves, having improved the character of the service rendered by the trucks and tended to stabilize the business. The replies from the members or representatives of these commissions are quoted in part below.

"The effect of regulation upon the extent of motor truck transportation in Indiana has been nil," says F. T. Singleton, chairman of the Public Service Commission of Indiana. "The effect of regulation upon the character of the service has been quite beneficial, because it gives a greater security to shippers who patronize the

common carrier trucks and invites into the field of this operation a more responsible class of operators. I believe there should be regulation of interstate motor trucks, for the reason suggested as to why intrastate regulation has resulted in benefit. I believe that such regulation should extend to the state authorities, to the extent that insurance requirements and other similar requirements made by the state for intrastate service be made applicable to interstate operators. This would be for the protection of shippers and would place the operators in touch with the state commissions for such incidental regulation of such operations as might arise from time to time."

"Although that part of the Iowa law which requires an applicant to make a showing that the proposed service will promote the public convenience and necessity has resulted in the denial of quite a number of applications," says George L. McCaughan, secretary of the Board of Railroad Commisisoners of Iowa, "we believe that regulation has been of considerable benefit to the authorized carriers and to the public. Our experience has also shown that these lines are gradually getting into the hands of more reliable operators. It is my opinion that there should be federal regulation of interstate motor carriers, both passenger and freight, in order to protect the public and the existing intrastate motor carrier."

Regulation Aids Responsible Operators

Harold E. West, chairman of the Public Service Commission of Maryland, says, "It is believed that regulation has tended to secure a higher type of operator and to permit the extension of motor truck transportation service where it has been found best for the public welfare and convenience. The commission believes that there should be regulation of motor trucks operating in interstate service and for substantially the same reasons as make desirable the regulation of such trucks in interstate service."

"The effect of motor truck regulation on the character and extent of motor truck transportation," says G. M. Rouse, chief of the motor transportation division of the Michigan Public Utilities Commission, "has been that all local business is now handled by licensed motor trucks, and we require from them a bond which indemnifies the shipper, and these permits are renewed annually, if service is given. The effect has been that good service has been given by each carrier in order to retain his permit. In our opinion there should be regulation of motor trucks operating interstate for the same reasons that require regulation of other interstate common carriers, such as railroads. All of the arguments which favor interstate regulation of railroads favor interstate regulation of motor trucks. It is our opinion that in time all of this interstate transportation by motor truck will become a part of the operations in connection with the great railway systems of the country."

"It is our opinion," says D. H. Lewis, supervisor of motor transportation of the Board of Railroad Commissioners of Montana, "that all motor vehicles operating in interstate service should be regulated, since the conditions under which they operate are similar to and the type of service rendered approximates the intrastate operation."

Fay Harding, member of the Board of Railroad Commissioners of North Dakota, states that the somewhat elastic regulation practiced by the commission in North Dakota has had the effect, to a certain extent, of limiting the number of Class A operators, those operating on fixed schedules over regular routes, giving the public better assurance of service and at the same time permitting the industry to grow. The regulation of Class B carriers, those not operating over regular routes, has not been in existence a sufficient length of time, according to Mr. Harding, to determine how that class of carrier has been affected. He believes, however, that the requirement of such carriers to furnish either bond or insurance has had a tendency to protect the public shippers and to build up a more reliable class of carriers. With respect to interstate regulation, Mr. Harding says that there should be such regulation. He adds, "Motor service, whether passenger or freight, is more or less a local service, the truck service being more local than the passenger service. We are of the opinion that if Congress can authorize state departments to regulate interstate carriers such as these, that is the proper way to regulate them. There should be no attempt to regulate the Class B carrier by interstate regulatory bodies. That should be wholly taken care of by the state regulatory bodies. The Class A carrier can very agreeably be taken care of by the cooperation of the state regulatory bodies in those states in which the applicant proposes to operate."

Little Effect From Regulation in Ohio

"In the opinion of the commission," says James W. Huffman, member of the Public Utilities Commission of Ohio, "motor truck transportation regulation has had very little effect upon the character and extent of truck operation in Ohio. In our opinion, there should be regulation of motor trucks operating interstate. The density of traffic is becoming quite a problem and the conservation of our highways is vital to the entire public. Intrastate operations must necessarily be regulated and interstate operation should be granted no advantage over intrastate movements."

J. D. Holland, of the legal department of the Corporation Commission of Oklahoma, says, "Since the regulation of motor truck carriers in this state, that business has been gradually growing and increasing and is continuing to grow and increase. In our opinion, there should certainly be regulation of motor trucks operating interstate for the same reasons that there should be regulation of motor trucks operating intrastate, or for the same reasons that there should be regulation of any public utility."

A similar opinion is expressed by Benjamin F. Forbes, Jr., secretary of the Public Service Commission of Oregon, who says, "We believe that motor trucks operated interstate should be regulated to provide uniformity of operating conditions in the states through which such carriers pass and also to provide a means whereby the public can secure protection from operations which would otherwise not be subject to any regulatory authority." Mr. Forbes also states that the Oregon law which provides for complete supervision and regulation of motor trucks has "greatly improved the efficiency and character of service rendered."

"It is believed," says Nat Turner, director of the motor vehicle division of the State Highway Department of South Carolina, "that the regulation of motor truck operation has, to some extent, improved the service, since prior to regulation there were any number of trucks operating between given points, or not operating as they saw fit, starting at any time and stopping likewise. Under regulation truck operators are required to maintain schedules and render the service authorized under their certificates of public convenience and necessity at all times. As to our opinion whether or not

there should be regulation of motor trucks operating interstate, I believe such operation should be regulated by the states in which the operation is carried on."

Regulation Stabilizes Trucking

"Our opinion is that regulation has materially stabilized the business of motor truck transportation," says E. F. Norman, secretary of the Board of Railroad Commissioners of South Dakota. "As to the effect that the regulation has had upon the extent of motor transportation, we believe that insofar as intrastate motor transportation is concerned, the law materially restricted destructive competition, either between motor and rail companies or between motor companies. We are firmly of the opinion that motor carriers operating interstate should be regulated and we are quite clearly of the opinion that it is only a question of time until those actively engaged in the operation of motor trucks will demand such regulation. A state has not the power to deny a motor carrier the right to engage in interstate commerce, and as a result of this inability situations have developed where motor carrier competition is carried on far in excess of the public needs and to an extent that is destructive to those engaged therein. It might be assumed that the doctrine of the survival of the fittest, if applied, would solve the situation. It does not seem to do so, however, as there appear to be one or more parties ready and willing to step in and endeavor to succeed where others failed.

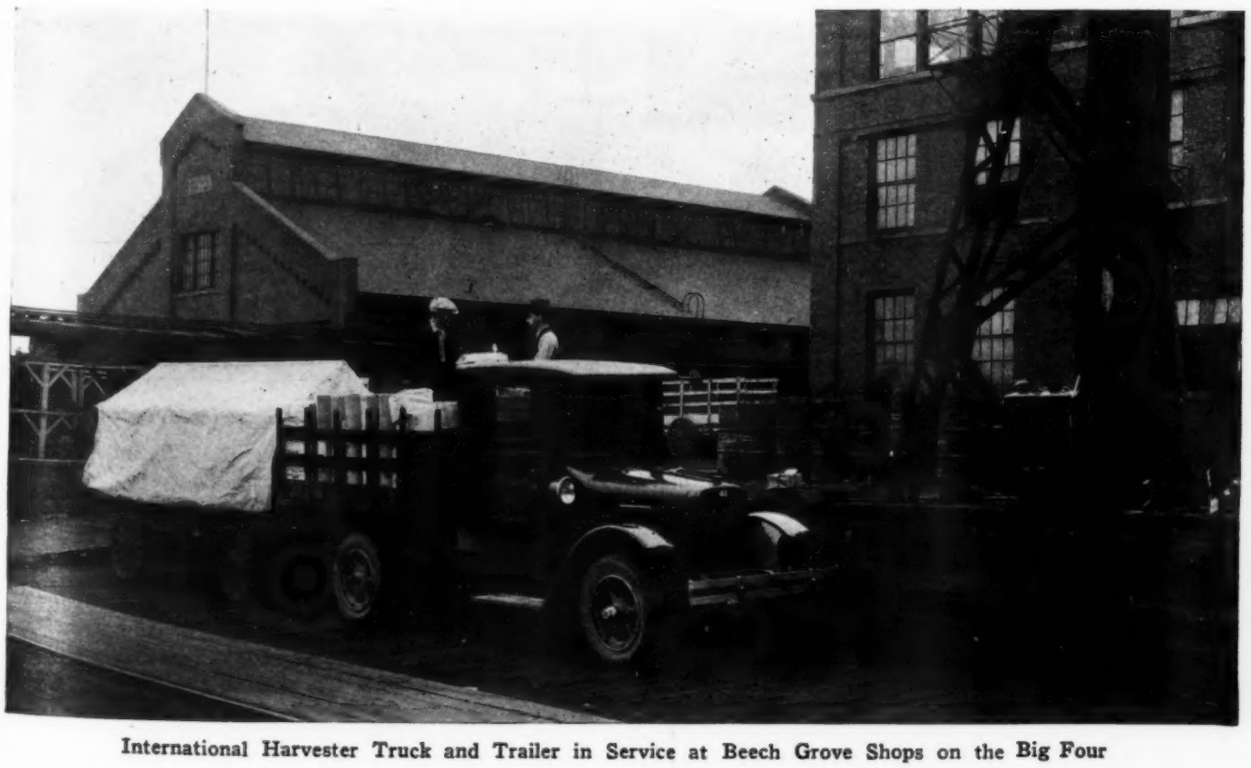
"Regulation in this state has resulted in more dependable transportation by motor trucks over the highways," says E. E. Corfman, president of the Utah Public Utilities Commission. "In some sections of the state it has brought order out of chaos, and has lent encouragement to the building up of industries and the development of territory that otherwise might have been more or less dormant. Regulation of motor trucks has also safeguarded the public interest by precluding, in some instances, their encroachment upon rail carriers in territory where rail service was indispensable and might otherwise have been discontinued because of insufficient traffic to support both rail and truck service. It is my opinion that there should be regulation of motor trucks operating interstate. Regulation, in my judgment, of the interstate motor trucks, would mean more dependable service and at lower cost. I can see no reason why unlicensed, irresponsible common carriers should be permitted to use the public highways for gain in their interstate operation any more than intrastate operators."

Enhanced by Regulation

Lester Hooker, chairman of the Virginia Corporation Commission, says, "Motor truck transportation, in my opinion, has been enhanced by its regulation, and the character of this mode of transportation has been greatly improved. It is my opinion that motor truck transportation operating between states should be regulated, but not by federal regulation. The greater portions of these routes are within the state of origin as a rule and the interstate traffic transported across the line into another State is merely incidental to the operation as a whole. While it should, in my opinion, be regulated, such regulation should be retained in the several states."

According to F. Chatterton, member of the Public Service Commission of Wyoming, there has been no apparent effect as yet of state regulation of motor trucks in Wyoming. The indication is, however, that the service will be much better as it will be furnished by competent operators. Interstate service should be regulated on the same basis as intrastate service, according to Mr. Chatterton, in order to maintain the highways protect the public by compulsory insurance, and guarantee the public adequate service at reasonable rates.

* * * *



International Harvester Truck and Trailer in Service at Beech Grove Shops on the Big Four

Containers in England

THE London Midland & Scottish has, during the past few years, experimented rather widely in the use of containers and this activity is described in a recent issue of the Railway Gazette (London), from which publication these facts and illustrations are taken. It is pointed out that the container is not new in England, certain forms having been used for years in baggage and parcel service between England and Ireland and across the English channel.

The experiments now being conducted by the L. M. S., however, involve a container something like that employed in America. To date four styles of containers have been developed—two of the closed type and two open. These types are designated and described as follows:

Closed Types

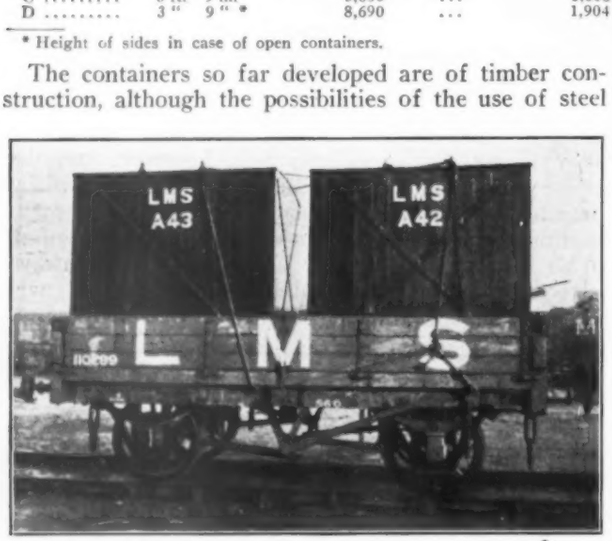
Type	Height at Center	Capacity Lb.	Capacity Cu. Ft.	Tare Lb.
A	6 ft. 6 in.	5,600	273	1,792
B	6 " 6 "	8,960	526	2,800

Open Types

C	3 ft. 9 in.*	5,600	...	1,008
D	3 " 9 " *	8,690	...	1,904

* Height of sides in case of open containers.

The containers so far developed are of timber construction, although the possibilities of the use of steel



Two Containers Type A on the Rail

or other metal are being considered. In the designs so far developed due regard has been given to existing railway facilities for handling them, i.e., cranes and cartage equipment.

In the case of the open type containers metal eyes are provided at the base for attachment of the crane chains. To prevent binding of sides and lading during lifting operations, reinforcements are provided at the top, and through the grooves of this "chain spreader" the chains are passed. So far the cranes used have been the ordinary fixed type but should the business develop widely the provision of mobile cranes of greater capacity might become necessary. The company is also studying the possibilities of a container fitted with casters which could be handled without utilizing a crane.

The company believes that should the use of containers develop greatly, special cars to handle them on the rails could be utilized, which cars could be little more than running gear and underframe—in other words, to use an expression from the automobile industry, a bare "chassis" of a freight car. Indeed a car of this type has already been developed for experimental purposes. To insure a maximum utilization of container equipment and avoid empty movement, their distribution is centralized in the office of the chief goods manager of the railway at London. All movements are telegraphed to this central office which records them on a wall board by the use of various colored cards for each type of container showing: 1. Traffic waiting, i.e., containers required; 2. Containers supplied for loading; 3. Arrived for delivery; 4. On hand empty.

The Railway Gazette reports that so effective has been this control that in spite of their limited number

Large Open Container on Freight Car

(400 or 500) loaded mileage has approximated 80 per cent. Generally speaking the use of containers has been limited to service from one shipper and one consignee, although under favorable conditions delivery to several addresses may be undertaken. A final rate basis for this class of business has yet to be worked out.

It will be recalled, in connection with a discussion of container operation in Great Britain, that the railways operate their own collection and delivery systems so that no complication arises by reason of the necessity of

From Car to Highway Vehicle by Hand Crane

the establishment of contacts with independent truck operators for the movement in the streets.

Advantages claimed for the container, as used in England, are: 1. Reduced loss and damage to lading; 2. Packing costs reduced; 3. Time and labor saved.

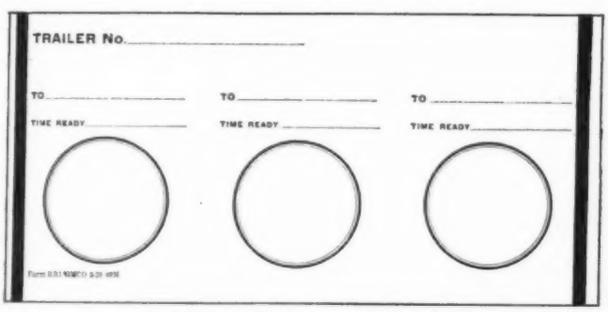
In considering the use of these units in Great Britain, in contrast to their use on this side of the Atlantic, attention has been drawn to the factor of railway collection and delivery there. Other differences with American practice are the greater use in that country of open top cars, the smaller capacity of cars and the average haul per ton of freight—58 miles in Great Britain as against 180 miles on Class 1 railroads in the United States and 327 miles in Canada.

Dispatching System Key to Efficient Operation

Excellent performance results in tractor and trailer operations by Drayage Service Corporation, Oakland, Cal.

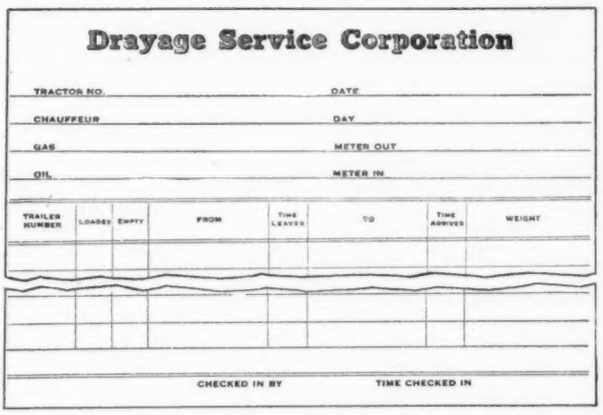
EXTRAORDINARY efficiency in the operation of its large fleet of tractors and trailers is obtained by the Drayage Service Corporation, Oakland, Cal., through the system of dispatching which it has in effect. Under contracts with the Southern Pacific, the Atchison, Topeka & Santa Fe, and the Western Pacific, this company handles all inbound and outbound L. C. L. freight moving between 21 stations and substations of these roads in the East Bay district in Oakland, Cal., by tractors and trailers of box car type. Company supplies of the Southern Pacific are also handled in this way, movements being maintained to the commissary stores, the division stores and the stationery stores.

The outstanding proof of the efficiency of the Company's operation lies in the fact that the standing time of its tractors has been virtually eliminated. Many records of eight hours or more of actual hauling of trailers in a 10-hour day with an hour lunch period for the driver have been made by the Drayage Service Corporation tractors. The average of the company is better than seven hours of actual tractor work out of a possible nine hours. There have been many instances of a single tractor serving eight semi-trailers continuously throughout the day without any time of actual tractor idling. The reason for this efficiency is the system of dispatching which is in effect.



Trailer Operation Card—Black Side
The Opposite Side, Printed in Red, Shows Inbound Movements

The railway division of the company, comprising all equipment used in transfer work for the various railways, is under the supervision of a dispatcher whose office is located at the principal Southern Pacific freight station in Oakland and is connected with all the other



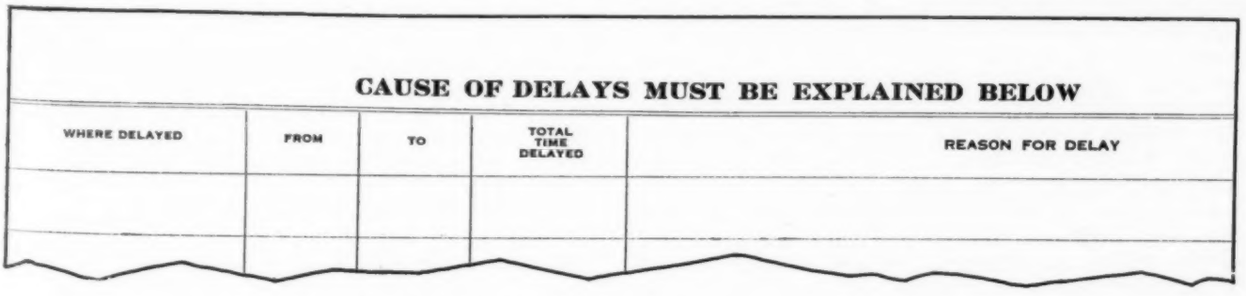
Each Tractor's Work During the Day Is Shown on This Form

stations, served by the tractors and trailers, by private telephone lines. The basic principle of the dispatching system is that the dispatcher knows at all times the exact location, load and destination of every tractor and trailer in the fleet.

The first step in establishing the dispatching system was to number all the tractors and trailers operated in railway service in the same manner that freight cars and locomotives are numbered. Second, a form was devised, called the dispatcher's daily record, upon which the operation of the tractors and trailers could be noted to give a complete picture of the operating situation at any time during the day.

Dispatcher's Daily Record

The dispatcher's daily record sheet is printed on heavy paper and measures 20 in. from top to bottom and 28 in. from the left side to the right side. It is printed in two forms, one form having the names of the 21 stations served by the tractors and trailers print-



Delays Are Explained on Back of Tractor Work Report Form

ed under the "from" column, and the other having these station names printed under the "to" column. In other respects, the inbound and outbound sheets are identical. As shown in the accompanying reproduction of the dispatcher's daily record, the station names are printed on the left hand side of the sheet under the "depot" heading. The remainder of the sheet is divided up into headings showing the hours during the day, beginning at 7 A. M. and extending through 5 P. M. Under each of these headings are spaces to show tractor numbers, trailer numbers, weights and names of drivers. Spaces are provided at the bottom of the sheet to show total weight and at the extreme right side of the sheet to show total weight of freight per station.

Complete information regarding each day's operation of the tractors and trailers is filled in on the daily record sheet, currently, as the equipment is dispatched, the size and character of the load, its destination, and later the exact time at which it left his station. The driver of the tractor assigned to hauling the trailer, either empty or loaded, telephones the same information to the dispatcher who consequently has a double check on the movement which is recorded on the daily record sheet.

To supplement the daily record sheet, the dispatcher records the movements of the trailers on cards which are kept in a card index on his desk. These cards measure 3½ in. by 7½ in. and are of white cardboard, being printed on one side in black and the other in red. The side printed in black indicates outbound movement and that in red, inbound movement. On each side is a space for the trailer number, the station to or from which the trailer is moving, the time when the trailer is reported ready to move, and space in which the dispatcher stamps the exact time at which

DISPATCHER'S DAILY RECORD — DRAYAGE SE

FROM TO / DEPOT	7 A.M.				8 A.M.				9 A.M.				10 A.M.					
	TRACTOR No.	TRAILER No.	WEIGHT	DRIVER	TRACTOR No.	TRAILER No.	WEIGHT	DRIVER	TRACTOR No.	TRAILER No.	WEIGHT	DRIVER	TRACTOR No.	TRAILER No.	WEIGHT	DRIVER	TRACTOR No.	TRAILER No.
Emeryville — Parkham																		
Paraffine																		
Stock Yard																		
University Ave.																		
Ward St.																		
Santa Fe West Berkeley																		
Santa Fe 40th & San Pablo																		
Santa Fe 1st & Alice																		
Commissary Stores																		
Division																		
TOTAL																		

The Dispatcher's Daily Record Sheet

by the dispatcher. At the end of the day the aggregate amount of freight handled to and from each station is taken from the record sheet and totaled in the total weight column.

Trailer Record Cards

The movement of the trailers to and from the various stations served by the Drayage Service Corporation is controlled entirely by telephone. Tractor drivers telephone the dispatcher immediately upon their arrival at a station to tell him the exact time of arrival and the character of the load taken to the station. The driver then receives his instructions from the dispatcher as to what his next move is to be, whether hauling a loaded trailer to another station or taking an empty trailer to a point where it is needed. A clerk at the same station also telephones the dispatcher the time of arrival of the trailer, the character of the load in it, and whether or not the trailer will be loaded with freight for later movement. Similarly, when a trailer is loaded a clerk at the loading station telephones the dispatcher the trailer left the originating station as telephoned to him by the tractor driver and the station clerk.

The card index is divided into pigeon holes representing each station. The cards are placed in these pigeon holes by the dispatcher with either the black or the red side outermost, depending upon whether the trailers covered by the cards are moving to or from that station. As an example of how the system works, we shall assume that the dispatcher has received a telephone call from a clerk at the East Oakland station advising that trailer No. 40 has a load going to the Fruitvale station. The dispatcher takes the card representing trailer No. 40 and on the black side stamps it with the name of the Fruitvale station and also the time when the load was ready as given him by the East Oakland station clerk. He then places this card in the pigeon hole representing the East Oakland station until such time as the dispatcher is advised that the tractor ordered to East Oakland has taken the load, when he stamps the time of departure in the appropriate space, then placing the card in the Fruitvale pigeon hole with

the red side outermost. Upon the arrival of the tractor and trailer at Fruitvale the time of arrival is telephoned to the dispatcher by a clerk at the Fruitvale station and also by the tractor driver. This information is then stamped in the appropriate space on the red side of the card.

By this means a glance at his station index shows the dispatcher what trailers are enroute, between what stations, and what loaded or empty trailers are ready to be moved and at what stations.

This home-devised card record of the trailers acts as a check upon and a supplement to the dispatcher's daily record. From the two sources, the dispatcher knows instantly when a tractor is available and where loaded or empty trailers to be picked up are waiting. On the basis of this information he dispatches his tractors to pick up trailers and deliver them wherever they are to go in the same manner that switch engines are sent out by a yardmaster to pick up and deliver freight cars. This close check on the operating situation, as it exists at all times during the day, enables the dispatcher to distribute his tractors and trailers to points where they are needed and when they are needed. He is thus able to break up the peaks at the various stations and to develop an even flow of business at the main transfer terminals.

Drivers' Performance Checked

To enable a check on the work of the tractor drivers, a daily record is kept of each tractor's performance. This record shows the tractor number, the date, the name of the driver, the gas and oil readings, and the reading of the meter when the driver takes the tractor out and again when he brings it in. This information is followed by a list showing the numbers of the trailers handled by the tractor during the day, whether they were loaded or empty, the originating point, the time when the tractor left that point with the trailer, the destination point and the time of arrival, and the weight of freight handled. The information on this sheet is kept by the driver. Since the time required for trips between the various stations served by the company is definitely known, any deviation from this scheduled time in the performance of a tractor driver is immediately noted. For example if the scheduled time between one station and another is 25 minutes and a driver takes 35 minutes to complete the trip, an explanation of the delay is required. This information is set down on the reverse side of the daily tractor record sheet. In the indicated columns the point where the delay occurred is shown, as well as the total time consumed during the delay and the reason for the delay.

Further Check Afforded

A further check upon the performance of each tractor is enabled by the steel recordographs fitted into the hub of the right front wheel of each tractor and by service recorders fitted in the cab of the tractor. These show exactly how many minutes of running time and standing time that tractor had during the day. If an undue amount of standing time is plainly shown, the reasons for it can easily be ascertained.

The purpose of the dispatching system is, of course, to keep the freight handled by the tractors and trailers moving toward its destination without delay and to insure the full use of the equipment of the operating company. Tractors and trailers standing idle are a liability rather than an asset and increase operating costs greatly. Particularly is this true of idle tractors. By means of the dispatching system trailers are furnished the various stations whenever there is freight available to be loaded in them, and tractors can be had ready to move the loaded trailers as soon as the loading has been completed. Not only does this speed up the movement of the freight, but it enables the virtual elimination of waste time and secures a full day of actual work from each piece of equipment operated by the company.

SE RPORATION DATE

1 P.M.			2 P.M.				3 P.M.				4 P.M.				5 P.M.				
TRAILER No.	WEIGHT	DRIVER	TRACTOR No.	TRAILER No.	WEIGHT	DRIVER	TRACTOR No.	TRAILER No.	WEIGHT	DRIVER	TRACTOR No.	TRAILER No.	WEIGHT	DRIVER	TRACTOR No.	TRAILER No.	WEIGHT	DRIVER	WEIGHT Per Station

The Dispatcher's Daily Record Sheet

Cotton Belt Argues For Motor Coach Operation

Declares right to replace motor car service on Tyler-Lufkin branch in Texas

ARGUMENTS in favor of its proposal to discontinue the operation of two motor-car trains each way per day on its branch line in Texas, between Tyler and Lufkin, and to substitute one mixed train and four motor coach trips each way per day, the latter operated under contract with an individual motor coach operator, were advanced by the St. Louis Southwestern of Texas in a memorandum addressed to the railroad commission of that state on February 24. At a hearing on the proposal, the commission, acting upon the advice of the attorney-general, refused to pass upon the legality of the proposed arrangement between the railway and the motor coach company, and heard arguments only on the proposal to discontinue the motor-car train service. This action was taken over the objection of the St. Louis Southwestern.

On account of the fact that the situation which confronts the St. Louis Southwestern is typical of conditions in many parts of the country, the argument of the railway contained in the memorandum is abstracted below. In addition to the material reproduced, the attorney for the railway cited many court decisions and decisions of various state regulatory commissions in support of its contentions and also filed a number of exhibits, showing the condition of the passenger business of the railways and particularly of the St. Louis Southwestern in Texas, and more particularly on the Tyler-Lufkin branch line. An abstract of the memorandum follows:

"To transport by motor vehicles the passenger traffic of the railway between Tyler, Tex., and Lufkin * would produce better and more efficient service than that now offered to the public; it would promote the interests of the traveling and shipping public; a more frequent, more comfortable and more expeditious service would be afforded; and by reason of such arrangements the large losses now suffered by the applicant railway in the operation of its motor-car trains would be transformed into small profits."**

Desirability of the Proposed Arrangement

For the purpose of testing the action of the commission in dismissing as much of the application as it did and in rejecting proof offered in support thereof, the allegations of the petition and the statement of the proof offered are to be taken as true. It appeared that the petitioner, W. E. Nunnellee, was in a position and had the facilities, capital and responsibility to handle and transport efficiently by motor vehicles the passenger traffic of the railway between Tyler, Texas, and Lufkin; that the transportation of said traffic by said motor coach company would at all times be under and subject to the regulation of the commission, and that both applicants had obligated themselves to provide and furnish at all times adequate and reasonable service for the handling of such traffic upon reasonable and adequate schedules therefor, which schedules would be co-ordinated with the railway's trains at the termini of the branch line. The arrangement further provided that if, and so long as, the motor coach company for any reason was unable to furnish such service, the railway would restore its trains during the period of such inability. That such an arrangement would produce better and more efficient service than that now offered to the public by either of the applicants; that it would promote the interests of the traveling and shipping public; that a more frequent, more comfortable and more expeditious service would be afforded, and that by reason of such arrangement the large losses now suffered by the applicant railway in the operation of its motor train cars would be transformed into small profits.

It was further shown that the reason for public preference of motor coach service lies in the fact that it is a better service for local traffic. Stops can be made and located more frequently and conveniently; ticket sales are much more conveniently made; the coaches are more comfortable vehicles than the motor train cars; service rendered by the motor coach is more flexible and can be more easily co-ordinated with the through train service of the applicant railway and other railways at Tyler, Lufkin and Jacksonville. Finally, the contract would place behind the motor coach service the financial and managerial ability and responsibility of the railway as a reputable and responsible transportation agency of years' experience.

As we conceive it, the commission's duty in the regulation of common carriers, both by rail and by motor coach, involves grave responsibility. The commission must look beyond the desire of any particular member of the public, or even a substantial group of such members, to have the service and operation of a given carrier designed to afford them the highest possible degree of service. It extends beyond the desires of any single man or of any community or group of communities. The application and the evidence offered, as well as much of the evidence introduced, show that this arrangement, if entered into, would prove beneficial not only for the reasons mentioned but also because it would tend to produce economical transportation. The primary reason for the institution of this commission was the regulation of freight rates. Under our present and constitutional system of regulation of public utilities any economy which can be effected directly affects the capacity of the railroad and of the regulating authorities to reduce the general level of carrier charges. It is the duty not only of the carrier but of the regulatory authorities to effect such economies whenever they can be made without injury to the public. To insist upon a common carrier making an expenditure for a service that is neither appreciated nor utilized, solely to satisfy public pride of a community or of a group of communities, is nothing more or less than to impose directly an unwarranted and unlawful burden upon the commerce both of the state and of the United States.

The Branch Line Problem

One of the most serious problems that confronts both the railroads and the regulatory authorities today is that with respect to the continuance or abandonment of branch lines. Under the Constitution of the United States, as interpreted by the Supreme Court, railway companies cannot be compelled to maintain railroads when to do so means an annual loss of revenue. The most expensive part of the operation of any branch line is the passenger service. If, through arrangements such as that proposed in this case, means are found to reduce the losses occasioned to carriers because of expenditures for this purpose, the necessity for the abandonment of such unprofitable branch lines will be measurably reduced.

The people generally, with rare exceptions, are depending upon the highways for their local transportation, and if the railway, by taking advantage of this trend of public demand,

can furnish not only as good, but even better, service than it now affords, and that at far less burden upon commerce, it is the duty both of the railway and of the commission to adopt such methods. If this commission decides that from a practical standpoint such an arrangement is a feasible and a desirable one, its responsibility is ended and its duty discharged. If thereafter a co-ordinate branch of the government should judicially decide that the arrangement is an illegal one, no harm could possibly have been done to the public, since the commission, in making the order, might condition it upon the continuance of adequate motor coach service.

Discretion Over Train Schedules

The action of the commission in dismissing that part of the petition relating to this joint arrangement leaves only the bare application of the railway to discontinue the operation of two of its passenger motor-car trains and to substitute therefor the operation of one train each way per day carrying passengers. We respectfully submit that the commisson has no jurisdiction to control the discretion of the railway with respect to this part of the application.

Circular No. 4758, issued by the commission on April 10, 1915, provides that the commission's consent be obtained before regular operation of any regularly scheduled passenger or mixed train shall be discontinued. This order, we, with all due respect, submit is valid only as a request upon the railway for the reason that the commission has no jurisdiction to control the discretion of a railway company as to its train schedules except to require that it operate a minimum of one train each way per day, as required by the statute.

Article 6341 (Revised Statutes 1925) provides, "Such corporation shall have the right to regulate the time and manner in which the passengers and property shall be transported * * * subject to the provisions of law * * *." Our search reveals no law that vests any power in the railroad commission with respect to train schedules, except the power to enforce a minimum movement of one train carrying passengers each way per day. The question is one strictly of law relating to the authority of the commission. We mention it now merely as notice of the position of the railway in this proceeding.

The right to the management of the corporate property of a railroad company is, by law, vested in its board of directors. The right of any public authority, including the railroad commission, to control the primary discretion of corporate management is limited to cases where that discretion has been improvidently exercised to the injury of the public. It is only when a public injury has resulted or will result from a corporate act that the public regulating authority can constitutionally substitute its judgment for the judgment of the railway directorate. The question of when, where and how often and what kind of trains shall be run is primarily a question of business, to be answered by the responsible management of the railway. The presumption is that since the railway company is organized for profit it will, because of its own self-interest, furnish service sufficiently adequate to handle the business which it is offered or which it can acquire. Vigorous competition between carriers for business furnishes an excellent illustration of the working of the force of self-interest. It is only when the corporate management fails to provide reasonably adequate service that the public authority may step in.

From the foregoing it would appear that in the absence of proof to the contrary, the exercise by the corporation of its discretion over the control of its trains is prima facie a valid and binding one, and the burden is upon him who asserts that it has been improvidently exercised to the injury of the public. The fact that the corporate management has decided to take off these trains is prima facie evidence that from a business standpoint the trains should be taken off and the burden is upon the protestants to show that they should be continued. This burden they have totally failed to meet. There was not only no testimony, but it was practically conceded that these motor train cars performed no service in the transportation of passengers that is not being as efficiently and more expeditiously and more comfortably performed by the present existing motor coach facilities, to say nothing of the facilities which would be installed when the arrangement between the motor coach company and the railway becomes effective. If the public is furnished the use of the same stations, a more expeditious schedule, transportation agencies moving at the same time between the same points, stopping at all stations and at points at which the motor-car trains do not now stop, under what conceivable hypothesis could the claim be that the discretion of the railway company to discontinue these motor train cars has in any way prejudiced the traveling public?

It seems to be the position of the protestants that a carrier owes a duty not only to passengers, to carry them when they offer themselves for transportation, but a duty to communities located along it, to furnish advertising for the community that train service can be had if anybody should desire to use it. In other words, their position is not that the discontinuance of these trains will inconvenience any passenger, but that it will injure the communities, and particularly the business houses located in the communities, because of the ignominy which would come from the fact that its passenger train service was discontinued, even though the service is neither necessary nor profitable. Reduced to its last analysis, the contention of these gentlemen is that the railway company may, through the force and power of the state, be compelled at its own expense to advertise the facilities of local business houses. A similar contention was thus characterized by the Montana Commission in the case of re Helena Light & Railway Company, P. U. R. 1922-D, 848:

"Nor are we influenced herein by any solicitude for business houses located on the line and possible losses to them through the proposed changes. Reasonable service upon the part of the utility is not to be measured by the necessities of another man's business. The railway is to serve the public, not the purses of private enterprises on its right-of-way. What gains accrue to such other businesses by reason of the railway's presence and continued operation of given cars are incident to the company's discharge of a public duty, and, when reasonable necessity therefor no longer exists, service may rightfully be terminated without reference to private profits."

Operations at a Loss

The evidence in this case is undisputed and conclusive that these motor train cars for the past two years have been operated at a substantial loss, and that they can continue to be operated only at an equal or even greater loss. The total revenue received from all sources from the operation of these motorcars was approximately $53,000 in 1926 and $48,000 in 1927. Of this amount, however, approximately $11,000 in each year was revenue from mail and express which the railway could handle in another manner, so that the actual passenger revenue was but $42,000 in 1926 and $37,000 in 1927. The cost of operating these cars during each of the two years averaged in excess of $57,000. This cost includes only the so-called out-of-pocket expenses, all of which would be saved should the trains be discontinued. There was, therefore, a deficit of from $5,500 to $8,500 if the mail and express revenue be included, or a deficit of from $16,000 to $20,000 if it be not included, as we contend it should not be. With respect to this expense, it should be borne in mind that we are dealing only with a fraction of the actual expenditures incurred by the railway in maintaining transportation; that is, only the expenditure known as out-of-pocket cost.

Operation of Motor Cars

The president and superintendent of the railway testified that with the advent of good roads and automobiles there was little need and practically no demand for the continuance of local passenger train service, and that this was particularly true upon the branch line in question in this proceeding. In a number of opinions rendered by this commission within the past several years, as well as in the opinions of many other railroad and public service commissions of other states, this fact has been recognized. With respect to the state as a whole, the number of passengers carried by the Texas railroads in 1926 was less than half of the number of passengers carried by the railroads in 1911, while the average distance of the passengers carried in 1926 was 102 miles, not quite twice the average distance of the passengers moving in 1911, 53 miles. It is well known that, because of its large branch-line mileage within the state and the fact that it operates relatively few through passenger trains, the passenger traffic of the applicant railway company is largely limited to local traffic. In this respect it operates at a severe disadvantage when compared with its competitors. In 1927, the applicant railway carried one-third as many passengers as it did in 1917, ten years before, and the average distance a passenger was carried by it in 1927 was 48½ miles, or less than half the average haul within the state as a whole and but 7 miles more than its average haul in 1917. This commission, as well as other commissions and courts, has held that the test of public necessity for passenger service is its demand for such service. That demand is not to be evidenced by vocal efforts at a hearing such as this, in which it is frankly admitted that the particular protestants prefer their own vehicles for transportation, but by the number of persons who apply for passage upon the trains.

What has been said with respect to the state as a whole and with respect to the applicant's operations as a whole is equally true of the branch in question. This branch operates through

three prosperous, rapidly growing and developing counties of East Texas. It serves three of the largest cities in East Texas. The counties served by this branch have not only rich natural products, forest products and agricultural resources, but also within recent years they have developed industrially. The population of Angelina, Cherokee and Smith counties has doubled in the 15-year period, 1910 to 1925.

In normal course of events, where there has been so marked a development, both in population, industry and wealth, it would seem to follow that the railroad may reasonably expect to participate in the prosperity of the community and show a corresponding increase in its passenger traffic. So far from this being the case, the reverse has taken place. The average number of passengers per train has fallen from nearly 34 passengers in 1913 to not quite 8 passengers per train in 1927. This is a decline of 77 per cent in the average number of passengers, although the train miles run by the railway remained the same and the expense to the railway, relatively the same. Obviously the service required for a demand of 100 per cent in 1913 is not needed to serve adequately a demand less than one-fourth that in 1928. Whereas, in 1913, each inhabitant in the three counties served by the branch line traveled an average of over 47 miles per year on the branch line, each inhabitant of the same counties during the year 1927 traveled an average of 5½ miles upon the branch line, a decrease of 88 per cent.

The cause of this amazing decline in local traffic is not far to seek. Witness after witness for the protestants freely admitted that he did not desire the trains continued for his own personal use because he used his automobile, but that they be continued upon the off-chance that somebody else might desire to use them. The commission will recall that there were probably in excess of 25 people from Lufkin at the hearing at Alto on the first day of the hearing, 4 of whom came on the railroad train. The remainder came, possibly, by motor coach and probably by private automobile. The decline in the passenger traffic of the railroad has been at precisely the same rate as the increase in the automobile registrations in these three counties.

With respect to the inability of the public to secure local transportation by means other than these motor-train cars, the only evidence introduced by the protestants is to the effect that at times the "road is rough, washouts occur, making it necessary to transfer passengers in motor coaches or private cars; that the road may be reconstructed, requiring detouring; that oil may be struck, requiring greater passenger facilities, and, finally, that if all of the passengers of the railroad are transferred to the highway the highway will be so congested that it cannot be used by other inhabitants."

None of these matters are of serious enough importance to justify a detailed answer. It may be that the road at times gets rough and that washouts occur with their consequent delays. The same thing is true to an equal degree of the railroads, which likewise have washouts and which likewise occasionally get rough, and which likewise under periods of reconstruction sometimes require detours. The evidence, however, conclusively shows that, whatever the condition of the road may be, it is utilized by the public and by the motor coaches all year round, in wet weather and good weather, and that despite the fact that it may at times be rough, the public prefers it to the railroad. With respect to an oil boom, it may be said that if the self-interest of the railroad company does not incite it to restore passenger service when an actual and bona fide demand therefor arises, then the state in its sovereign capacity has the power to compel it to furnish a reasonable service, at that time. With respect to the charge that the traffic of the railroads would congest the highway, we know of no provision in the Texas laws that permits the protestants in this case to arrogate to themselves the exclusive right to use this highway, and to deprive other citizens and taxpayers from using it. The evidence shows that a large percentage of the total road taxes in districts through which the railway runs in these counties is paid by the railway and that the entire traffic now handled by the railroad can be conveniently handled by the institution of but one more motor coach trip between Lufkin and Alto. The statement, however, that a highway that has but 1,000 motor vehicles upon it a day is in immediate danger of being overtaxed approaches the ridiculous when it is remembered that there are highways carrying many times that many automobiles each day.

Mail and Express

Some testimony was introduced with respect to the mail and express service. Insofar as the mail is concerned, it is a fact, of which the commission may take judicial knowledge, that the United States utilizes motor trucks and motor coaches for the transportation of mail whenever the train schedules are not operated to its satisfaction, or whenever in its opinion a more expeditious service is required. With respect to express, the railroad company operates freight trains each way per day which deliver the express at the terminals of the road in ample time to make all necessary connections. However, we submit that the commission should dispose of this petition with respect to passenger service irrespective of the transportation of express. In order to transport mail and express it is not necessary to operate expensive passenger trains, and the carrier should be permitted to furnish this service in whatever form is most economical to it. Express or mail service should not form the excuse of compelling a carrier to furnish expensive and wholly unnecessary service. The passenger trains are operated for the purpose of carrying passengers. Mail and express are incidental and accessorial services which can be performed in other and more economical ways in the event it is not necessary to operate passenger trains.

The railway company owes an obligation to furnish reasonable and adequate service to the public served by it. The adequacy of this service is tested by the public use. If the public does not use it to a sufficient extent to pay a bare out-of-pocket expense for furnishing the service, the public cannot expect the railroad company to continue to furnish it. This is particularly true in this case, where, because of greater facilities, more comfort, greater convenience and flexibility, the public has adopted a more modern means of transportation. Having done so, it cannot reasonably expect the railroad longer to offer to furnish a service which it does not desire nor need.

* * * *

One of the Macks Which Carry Employees Between Knoxville and John Sevier on the Southern

Hearing on Freight Trucking in New York

HEARING on the investigation of the Interstate Commerce Commission into freight trucking on Manhattan Island opened in New York May 22 with the taking of evidence offered by the carriers involved before Commissioner Porter and Attorney-Examiner Harry C. Ames. The opening testimony of the railway officers was mainly in the nature of an historical recital of events and causes leading to the establishment of the trucking service by the Erie in 1921 and its subsequent adoption by other lines. The New York, New Haven & Hartford, however, which has not followed the other roads in their suspension of the constructive station tariffs, stated its position to be one of favoring a continuation of the trucking service as a worthwhile experiment in their effort to evolve a suitable substitute for their floating, lighterage and pier station operations.

Examiner Ames announced that the scope of the investigation would be such as to include all types of trucking service being offered by the respondent carriers. These are inland station service, constructive stations and trucking in lieu of lighterage. At the outset a protest against maintaining the service by roads entering the New Jersey side was filed on behalf of the Board of Commerce and Navigation of that State. This protestant complained that the practice constituted a discrimination against New Jersey shippers who must assume the entire trucking expense while New York shippers who appoint a railroad's trucking contractor as their agents under the constructive station plan are favored in trucking rates. The Brooklyn Chamber of Commerce announced that it takes no position at this time.

The Erie, inasmuch as it was the first of the carriers to install the trucking services in schedules filed during 1921, was the first to offer testimony. M. B. Pierce, general attorney, announced that none but historical testimony would be offered by his witnesses at their first appearances. He stated that they would be recalled later to testify as to operations and other aspects of the scheme.

H. C. Snyder, assistant freight traffic manager of the Erie, was then called as the first witness. Mr. Snyder was general freight and passenger agent of the Erie's New York region at the time the service was inaugurated in 1921 and thus was connected with its establishment directly.

The witness testified that the first tariff in 1921 established constructive and inland stations but made no provision for trucking in lieu of lighterage. This latter was added in a subsequent tariff which became effective during 1922 and there was no later change down to the announcement of the suspension of the tariff, which has been held up pending the outcome of the I. C. C. investigation.

Since there was no cross-examination of Mr. Snyder, J. M. Condon, general manager of the New York district, was called as the second Erie witness. Mr. Condon testified that the trucking service was performed for the Erie by the United States Trucking Corporation which was under contract for the work and was granted exclusive right to haul Erie freight under the scheme. Under this contract the road pays the trucking company seven cents per hundred pounds and in addition provides ferry service between Manhattan and the Jersey side on the railroad ferries.

The cross-examination of Mr. Condon was opened by questions from William La Roe, Jr., who represented the Port of New York Authority. Quoting extensively from previous testimony of J. J. Mantell, former vice-president of the Erie, Mr. La Roe drew from the witness an agreement with such quoted testimony that the reason for the initial establishment of the trucking service was to relieve congestion at crowded piers of the company. The witness also stated in response to questions from Mr. La Roe his agreement that relief was needed at the piers was confined to the time of such testimony. Mr. Condon also agreed with this questioner that there were no complaints from receivers under the trucking plan and that the plan generally was working well.

The cross-examination of Mr. Condon was next taken up by W. H. Chandler, traffic manager of the Merchants Association of New York who turned first to the question of congested piers. The witness held that his agreement with former Vice-President Mantell's testimony on the point did not apply to present conditions. He insisted on the contrary that facilities are now adequate to handle traffic without the trucking plan. In response to another question from a representative of a New York trucking company, Mr. Condon reaffirmed his previous direct testimony that the United States Trucking Corporation had enjoyed exclusive rights to haul Erie freight. This concluded the testimony of the Erie on the historical development down to the announcement of suspension of the trucking practice.

The first witness for the Lehigh Valley was A. C. McIntyre, general freight agent, who was called by General Solicitor E. H. Burgess to testify as to the reasons prompting the Lehigh Valley to follow the lead of the Erie in offering this trucking service to shippers and consignees on Manhattan Island. Mr. McIntyre declared the competitive situation to be the determining factor in the decision of his company to enter the field. He testified that loss of traffic by the Lehigh was the effect of the Erie's action in filing the constructive station schedules and providing the other trucking services. The witness further stated that the Lehigh pays eight cents a hundred pounds to the trucking company but this includes a one cent allowance for ferry charges which are paid by the trucking concern, since the Lehigh does not maintain ferry service. As in the case of the Erie the trucking work is given exclusively to the United States Trucking Corporation.

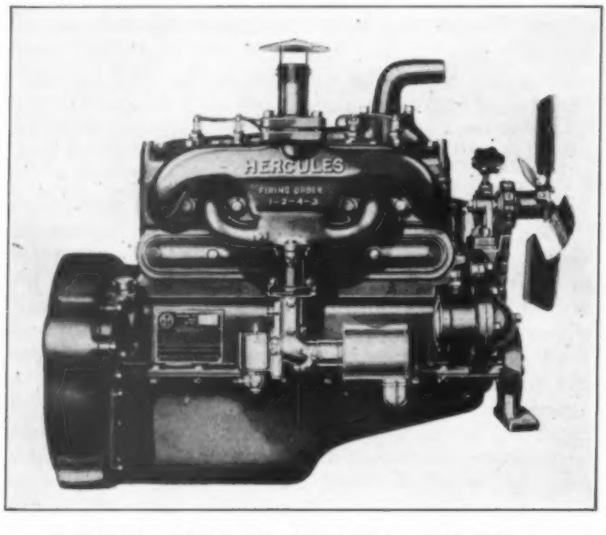
Remaining cross-examination of the witness was confined largely to questions regarding a three-cent per 100 lb. allowance which the Lehigh makes to receivers of certain commodities if these consignees do their own trucking between Jersey City and Manhattan. The plan is designed to relieve the road from the handling of goods which present difficulties in pier handling. Mr. McIntyre stated that this was a practice of many years standing.

At the opening of the afternoon session the Delaware, Lackawanna & Western presented the testimony of M. Williams, assistant general freight agent. He testified that the Lackawanna had established three constructive stations on Manhattan under schedules which became effective April 1, 1925. The trucking is done exclusively by the Railway Motor Trucking Company, Inc. to which concern the road pays eight cents per 100 lb., including ferry charges. The Lackawanna has no inland stations.

The hearing was continued and further testimony will be reported in next week's regular edition of the *Railway Age*.

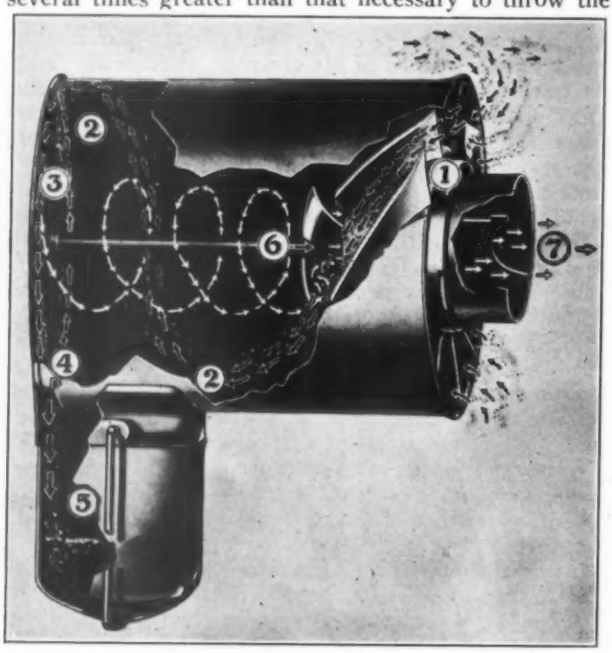
Air Cleaner for Gasoline Motor

THE AC Spark Plug Company, Flint, Mich., has placed on the market an air cleaner designed to prevent dust from entering the engine through the carburetor. Referring to the cut-away view of the



A Hercules Motor Equipped with an Air Cleaner

air cleaner, at (1) the suction stroke of the engine causes dust-laden air to enter the cleaner between directing vanes which give it a rapid, spirally rotating motion. At (2) the centrifugal force developed is several times greater than that necessary to throw the



A Cut-Away View of the AC Air Cleaner

dust particles out of the air and against the inside wall of the cleaner. At (3) the spiral travel of the dust along the inside surface of the cleaner wall brings the dust to the rear circular end. At (4) the dust is forced through the small outlet, and at (5) is collected in a removable container. At (6) the clean air, indicated by the white arrows rotating spirally in the central portion of the unit, strikes the directing plate and at (7) the straightened current of clean air leaves the cleaner to enter the carburetor.

"Let Us Be Fair"*

"A few days ago the state railroad commission granted a permit to a motor coach line to operate in direct competition with one of the beach lines of the Pacific Electric Railroad. Without regard to the merit of this particular proposition, it should be said that the general policy enunciated in such permits amounts to subsidizing competitors of railways and that in principle it is unfair and inequitable.

"The railroads are California's heaviest taxpayers. In addition to paying local taxes on their non-operative property, they must turn into the state treasury seven cents out of each dollar of gross receipts from passenger and freight traffic. In addition the railroads are obliged to bear, unassisted, the heavy costs of establishing and maintaining their roadbeds, trackage and rights-of-way.

On the other hand, motor coach lines pay almost no taxes at all. They are not required to give up seven per cent of their earnings to the state. They make a contribution toward the building and maintenance of highways through the gasoline tax, to be sure, but this is a minor item; the great bulk of the expense of highway construction and maintenance is borne by the general public and the railroads. Practically speaking, their roadways are built and maintained for them without charge.

"California owes a tremendous part of its development to the railroads; without them much of its area would still be ranches and desert, sparsely settled and almost unproductive; they are still the major reliance of the state in getting its products to market. They have been of immense utility and still are, but if their business is to be killed off by having the traffic which they themselves have helped to develop handed over to competitors in this fashion, the end of their economic existence is in sight.

"Even this does not tell the whole story. If the railroads had been treated like ordinary private businesses in the past, allowed free sway in setting their own prices for the services they render, they would have no ground for complaint if another agency succeeded in obtaining the business. But they were not given a free hand; their fares have been regulated, their earnings restricted even while their taxes rose; they have not been allowed to accumulate a fund which might now be used in protecting themselves in a competitive rate war. This is not argument against public regulation; it is an argument that if the state does regulate, it is in duty bound to protect. It has limited railroad earnings on the ground that railroads are a natural monopoly; the plain corollary is that this recognized monopoly should not be interfered with artificially and without compensating grants.

"Were the motor coach lines required, as the railroads are, to furnish their own highway, if they were regulated and taxed on the same basis as railroads, the conditions of competition would be even. Also, the motor coach fares probably would be as high as the rail fares, if not higher.

"The Times holds no special brief for the railroads. It has had several hard battles with them in the past. It has consistently opposed the railroads when it believed them wrong, and just as consistently it has been for them when it believed them right. It believes now that this whole matter of motor coach competition with the rail carriers needs to be taken up and settled according to the plain principles of equity and justice, and that the railroads should be given just as fair treatment as the public they serve."

* From an editorial in the Los Angeles (Calif.) Times of March 12, 1928.

C. H. BURR, treasurer of the S.K.F. Industries, Inc., New York, has been appointed a member of the board of directors, secretary and assistant treasurer of the Motor and Accessory Manufacturers' Association, to fill the vacancy caused by the resignation of A. H. D. Altree, vice-president of the American Bosch Magneto Corporation, Springfield, Mass.

Motor Transport News

THE MOTOR TRANSPORTATION COMPANY OF THE SOUTH, highway subsidiary of the Seaboard Air Line, on May 1 established a highway motor coach line between Jacksonville, Fla., and Live Oak, 81 miles.

BEGINNING on June 20, the Chicago, Burlington & Quincy will offer motor coach tours in connection with its railway service to the Black Hills of South Dakota. These highway tours will be of two or three day's duration on an all-expense basis.

THE ALTON TRANSPORTATION COMPANY has applied to the Missouri Public Service Commission for a certificate to permit the operation of a motor coach line between St. Louis, Mo., and Alton, Ill. The proposed route would supplement the train service between St. Louis and Alton.

CHANGES IN PASSENGER FARES on certain of its routes in northern and northeastern Minnesota were asked by the Northland Transportation Company, subsidiary of the Great Northern, in an application filed with the Minnesota Railroad and Warehouse Commission on March 21. Most of the changes proposed were small reductions in fares of from 5 to 40 cents. A few increases in fares were asked, including an increase from $3.50 to $3.75 for round trips between Hibbing, Minn., and Duluth, and an increase from $2 to $2.25 for one-way tickets between these points.

Reduced Rates on L. & N. Trains

In an effort to recoup its losses of passenger business in the vicinity of Memphis, Tenn., the Louisville & Nashville has placed in effect low round trip rates between Memphis, Clarksville and intermediate points. A 33 per cent reduction in the round trip fares has been effected. The tickets are good for 48 hours from the time of sale and carry baggage checking privileges. In cases where a longer stop-over is desired, a five-day limit round trip ticket is offered on a fare-and-a-half basis. The reduction in rates is effective until April 30 and will be made permanent if the results justify it.

Rhodesian Railways to Use Motor Vehicles as Feeders

The Rhodesian Railways at the present time operate seven highway motor routes, having a route mileage of 315, and eight new routes are at present planned, according to the Railway Gazette (London), "Railways and Road Transport Section." A railway road motor line has recently replaced the last mule-drawn stage coach line. Vehicles used are of the six-wheel type, to facilitate movement over unimproved roads. They are similar, it is said, to the vehicles used widely by the South African Railways, providing accommodations for both passengers and parcel freight, and extending transportation service to outlying districts not yet populous enough to support a railroad.

Supreme Court Rules on City Taxation of Interstate Coach Lines

Local ordinances governing the operation of motor coaches within a city cannot be applied to coaches in interstate commerce except in circumstances where a license fee is charged partially as a means of improving public highways, according to the United States Supreme Court in an opinion handed down on May 14 by Associate Justice Sutherland. The case decided was that of a motor coach operator against the city of South Bend, Ind., which was sent to the Supreme Court on a writ of error. The operator attacked the validity of a South Bend ordinance prohibiting the operation on the city streets of any motor coaches other than those licensed by municipal authority.

The operator has a motor coach line between South Bend and a point in Michigan. He had paid a state registration fee, but refused to apply for a city license, contending that the ordinance mentioned violated the commerce clause and the Fourteenth Amendment to the Constitution. These contentions were overruled by the trial court and a penalty of $50 for violation of the ordinance was sustained by the Supreme Court of Indiana.

Justice Sutherland held that a state may impose, even on motor vehicles engaged exclusively in interstate commerce, a reasonable charge as a contribution to constructing and maintaining the public highway, but such a factor was held not to be present in the case at issue. The justice also held that it could not be justified as an occupation tax.

Coach Line Regulation in Georgia

The temporary order, restraining the Georgia Public Service Commission from exercising jurisdiction over the motor coach lines in that state, which was granted on the petition of a number of independent operators, has been dissolved in the Fulton superior court. A supersedeas order has been granted, however, holding the matter in abeyance pending an appeal to the Supreme Court of the state. The motor coach operators contended that they could not legally be brought under supervision of the commission as "common carriers" in that they reserve the right to accept only such passengers as they see fit. The public service commission asked the right to exercise the authority granted it at the last session of the general assembly of the state.

Consolidation of Motor Lines Into National Organization Reported

Consolidation of a group of motor transportation lines into a single organization to be operated as a national motor coach transportation system with transcontinental service has been reported. According to reports, the new company would be formed around the California Transit Company as a nucleus. It is said that this company has a controlling interest in a holding company which has been formed to take over operating rights and facilities of established motor stage routes in a number of eastern and middle western states.

Motor Transport Legislation Deferred to Next Session

The House committee on interstate and foreign commerce at a meeting on May 15 decided to defer action until the next session of Congress on proposed legislation for the regulation of motor vehicle transportation. The sub-committee to which was referred the Parker bill recently, on May 12, submitted a report to the full committee recommending merely a short simple bill providing merely for the requirement that motor coach operators obtain a surety bond.

Extension of Motor Coach Service On the Union Pacific

The Union Pacific and its subsidiary, the Los Angeles & Salt Lake, recently applied to the Railroad Commission of California for permission to reduce train service on the branch line between Pico, Cal., and Anaheim, proposing to substitute motor coach service operated by the Union Pacific Stages, Inc., the highway subsidiary of the Union Pacific system. On account of the presence in this vicinity of another motor coach operator, the commission refused to grant the requested motor coach operating certificate sought by the Union Pacific. Officers of the railway, however, still hope that its proposal will eventually be put into effect. Although the Union Pacific has no similar applications for the substitution of motor coach service for train service at other points now pending, it is studying several similar possibilities, however, which may or may not develop.

Federal-Aid Highway Funds Appropriated by Congress

The Public Land bill providing for the expenditure of $3,500,000 a year for each of the fiscal years 1929, 1930 and 1931, as a special highway fund for federal-aid in 11 western states, has been passed by both the Senate and the House of Representatives. The bill will now go to the President for his signature. The purpose of the special fund created by

the bill is to permit the construction of the gaps in the federal-aid highway program which could not otherwise be completed on account of lack of funds, due to the inability of some of the states to match the federal government's appropriation on a dollar per dollar basis. These are usually states which are largely owned by the federal government.

In the state of Nevada, for example, 90 per cent of the entire domain is owned by the federal government. In that state there are 1,398 miles of federal-aid highways which can be improved with this special fund and which will ultimately mean the linking up of the entire 186,000 miles of federal highway system in the United States. The money is to be apportioned to each of the 11 states in the same ratio as the federal-aid fund of $75,000,000 annually appropriated. The new bill does not limit the cost per mile as is done under the regular annual federal-aid appropriation.

The states which will benefit under the measure and the federal highway mileage in each state, are as follows: Nevada, 1,398; Colorado, 3,332; Wyoming, 3,097; Arizona, 1,498; New Mexico, 3,298; Idaho, 2,770; Montana, 4,665; Washington, 2,927; Oregon, 2,840; Utah, 1,677, and California, 4,771.

Texas Commission Hears Cotton Belt Application

At a hearing at Alto, Tex., on January 30 and 31, the proposal of the St. Louis Southwestern to discontinue passenger train service on its branch line between Tyler, Tex., and Lufkin and to replace it with motor coach service was argued before the Texas railroad commission. The Cotton Belt had proposed entering into a contract with a motor coach company now operating between Tyler and Lufkin in order to provide service on the highway in place of that on the railway. Since the attorney general of the state ruled that this proposed contract might not be considered by the commission, the hearing at Alto had as its only subject the proposal to abandon passenger train service, although there was some testimony regarding the existing motor coach service and the effect that the complete replacement of train service by motor coach service would have on the territory served.

Daniel Upthegrove, president of the St. Louis Southwestern, and other officers of the railway testified in their arguments for permission to abandon train service that the passenger revenues on the Tyler-Lufkin branch have been far from sufficient to pay operating expenses. In answer to the contention of the opposition that this line loses no more than other branch line sections of the railway, it was testified by both Mr. Upthegrove and K. M. Post, superintendent of the Cotton Belt, that the loss from the Tyler-Lufkin branch is more serious than that encountered on any other of the Cotton Belt's branch lines.

W. E. Nunnellee, the owner of the motor coach line with which the Cotton Belt proposes a contract, testified as to the transportation facilities of his company. He denied that the Cotton Belt had any financial interest in his company and also that he owned any Cotton Belt stock.

On the second day of the hearing, representatives of several towns along the line testified in opposition to the railway's proposal. A number of them declared that they believed motor coaches could not handle the traffic between Tyler and Lufkin under present highway conditions and expressed the belief that the abandonment of service on the railway would result in harm to the communities.

The commission gave 30 days to each side in which to file additional briefs, and a decision on the case is not expected for some time afterward.

Among the Manufacturers

The Ludlum Steel Company and the **Central Alloy Steel Corporation** have been appointed American agents for the sale of nitralloy, a new steel recently introduced to the French Academy of Science by Dr. Leon Guillet. This specially-processed steel, resistant to heat and wear, is intended for automobile and aeroplane motor manufacture.

The stockholders of the **Yellow Truck & Coach Manufacturing Company**, Pontiac, Mich., at their annual meeting at Portland, Me., on May 17, elected the following board of directors to serve during the ensuing year: **O. L. Arnold, Irving B. Babcock, Albert Bradley, E. R. Breech, Fred J. Fisher, John Hertz, T. S. Morrell, J. L. Pratt, John A. Ritchie, Paul W. Seiler** and **Alfred H. Swayne.**

The Reo Motor Car Company, Lansing, Mich., has announced price reductions on its line of speed wagon chassis ranging up to $260. The company now has 13 speed wagon models, ranging in capacity from ½ to 3 tons, at prices from $895 to $2,090.

Joseph M. Brown, formerly assistant to the vice-president of the **White Company,** Cleveland, Ohio, in charge of the Central region, with headquarters at Chicago, has returned to the White Company in the same capacity and with the same headquarters. A photograph of Mr. Brown and an outline of his business career were published in the **Motor Transport Section** of November 27, 1926.

Orders for Equipment

THE READING TRANSPORTATION COMPANY has purchased 4 Model 75 White motor coach chassis on which are mounted "Club Coach" bodies built to the transportation company's specifications.

THE SOUTHERN PACIFIC MOTOR TRANSPORTATION COMPANY has purchased a Type-Y Yellow coach from the General Motors Truck Company, Pontiac, Mich.

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